

**Plumbing Advisory Board Worksession Minutes for December 16, 2010**

**Board Members Present:** Russell (Rusty) Strine, Plumber Representative, Chairman  
Michael (Mick) Late, Plumber Representative  
Gary Armbruster, Citizen Representative

**Absent:** David Gatrell, Health Department Representative

**Others Present:** Larry Willard, Chief Plumbing Inspector  
Shannon Walters, Secretary

**Subject:** Worksession

The Frederick County Plumbing Advisory Board meeting called to order at 2:10 p.m. by Board Chairman, Rusty Strine.

**Old Business**

None

**New Business**

Alternate Grease Trap – Larry Willard spoke to the board concerning a grease trap planned for the future expansion at Sam's Club, 5604 Buckeystown Pike (no permits applied for yet at time of these minutes). Larry presented Proceptor Fiberglass Reinforced Plastic manufacturer's specifications for two grease traps to be hooked together to create a 4 compartment, 2000 gallons total size. Larry said that this combination will exceed code requirements of 3 compartment, 1600 gallons, 1-4-57. Gary Armbruster motioned to accept the use of these grease traps when they are used together to exceed the current Frederick County Ordinance grease trap requirements. Dave Haller seconded the motion. The vote was 4-0 to approve.

Alternate Shower Pan Liner – Larry also presented information concerning testing results and certifications for the shower pan liner product, Mapelastic. The IPC accepts ICCES certification but Larry would like a determination from the board concerning IAPMO research and testing. Should Frederick County accept the IAPMO testing verses IPC ICCES reports? After discussion, Mick motioned to accept the IAPMO approval for Mapelastic product to be used in lieu of the current IPC shower liner per section 417.5. Gary Armbruster seconded the motion. The vote was 4-0 to approve. The discussion included that the tile installer shall provide a letter on company letterhead stating that they installed the product per the manufacturer's instructions.

Discussion between members and others present concerning Plumbing Advisory Board By-Laws, but no decisions were made at this meeting. The members were given copies of another county boards by-laws to look over for the next meeting. A meeting date was not set.

**Adjournment**

Gary Armbruster motioned to adjourn the meeting at 2:45 p.m. Dave Haller seconded the motion. The vote was 4-0 to adjourn.

Respectfully Submitted,

*Shannon Walters*

Shannon Walters, Secretary to Fred. Cnty. Plumbing Advisory Bd.

Attachment



## **FREDERICK COUNTY PLUMBING ADVISORY BOARD**

30 North Market Street • Frederick, Maryland 21701

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### **AGENDA**

**December 16, 2010**

**1<sup>st</sup> Floor DPDR Meeting Room**

**2:00 p.m.**

- 1) Administrative Business**
  - a. Introductions**
  - b. Approval of Minutes, April 20, 2010**
- 2) Old Business**
- 3) New Business**

This meeting was requested by Chairman, Rusty Strine for the purpose of meeting as required by the Frederick County Ordinance every 6 months, §1-14-38. Also the chairman has requested the meeting to review the following items after a discussion with Chief Plumbing Inspector, Larry Willard.

- a. Alternate grease trap, §1-14-57 – Proceptor Fiberglass Reinforced Plastic
  - b. Alternate shower pan liner, IPC Section 417.5 – Mapei Corporation/Mapelastic to determine if we should accept Iapmo approval vs. ICCES Report
- 4) Conclusion**
  - a. Set next meeting if applicable**

#### **Board Members:**

Rusty Strine, President  
Dave Gatrell, Frederick County Health Dept.  
Gary Armbruster, Other Person Representative  
Michael Late, State or County Licensed Plumber  
David Haller, Other Person Representative

**Willard, Larry**

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**From:** Ken Haven [klh@bgark.com]  
**Sent:** Wednesday, October 20, 2010 1:29 PM  
**To:** Willard, Larry  
**Cc:** Jason Scates  
**Subject:** Sams Club 6652 expansion Frederick, MD  
**Attachments:** Proceptor\_GREASE\_USA.pdf; P4 PLUMBING DETAILS - 6652.pdf; INSTALL OMC 500-1300 UPC-R4.pdf; GMC\_1500\_IPC(2).pdf

Hello attached is some manufacturer's information on the proposed interceptors, and the details we currently have on our plans, in regards to a recent phone call with Jason Scates for the above mentioned.

Thanks,

Ken Haven  
Benchmark Group Building  
1805 N 2nd St  
Rogers, AR 72756  
Direct: 479-631-5299

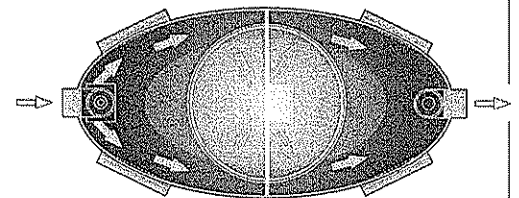


## Tangible Wastewater Solutions Designed for your business

Proceptor™ grease and solids interceptors for food service and processing establishments are uniquely designed for efficient separation of grease and solids from wastewater. When coupled with a regular pump-out schedule and best management practices, Proceptor's performance is unparalleled. Sold throughout North America, Proceptor systems meet the local plumbing and building code requirements to ensure wastewater effluent compliance.

## Engineered to perform

- Patented design for optimal pollutant removal
- Elliptical separation chamber eliminates scouring of stored grease and solids
- Tough reinforced fiberglass construction eliminates corrosion
- No moving parts or mechanical service requirements
- Smooth inner walls and rounded bottom minimize pumping and cleaning effort
- Sized based on site-specific water flow and use to ensure performance
- Multiple system configurations available for installation flexibility



TOP VIEW - FLOW PATTERN

## Built with your business in mind

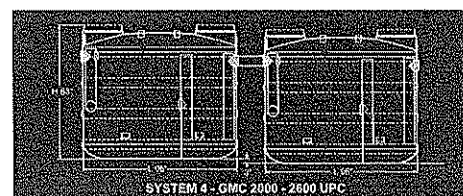
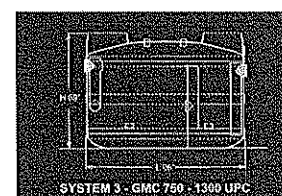
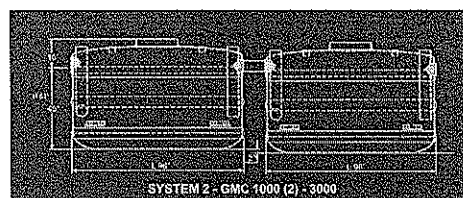
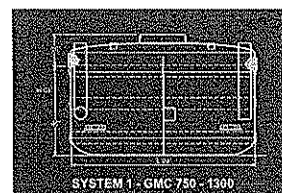
Our flexible manufacturing capabilities allow us to build custom grease and solids interceptors configured to your specific requirements. Systems range in size from 50 gallons up to 10,000 gallons in capacity.

Our line of Proceptor interceptors are engineered and built specifically for effective removal of grease and solids from wastewater. Our experienced team can configure the right solution for your site to ensure local wastewater effluent regulations and plumbing codes are met.

## Multiple system configurations

### International Code Council Configuration

Model (U.S. gal)	Dimension L x W x H (in.)	Wt. (lb)	System Type
GMC 50	62 x 32 x 24	115	1
GMC 100	62 x 32 x 32	130	1
GMC 150	62 x 32 x 40	160	1
GMC 200	62 x 32 x 48	185	1
GMC 300	62 x 32 x 64	235	1
GMC 500	96 x 62 x 48	500	1
GMC 750	96 x 62 x 61	575	1
GMC 1000	96 x 62 x 75	650	1
GMC 1300	96 x 62 x 90	745	1
GMC 1000 (2)	2 (96 x 62 x 48)	1000	2
GMC 1500 (2)	2 (96 x 62 x 61)	1150	2
GMC 2000	2 (96 x 62 x 75)	1300	2
GMC 2600	2 (96 x 62 x 90)	1490	2
GMC 3000	2 (96 x 62 x 101)	1610	2



### Uniform Plumbing Code Configuration

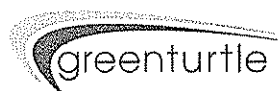
Model (U.S. gal)	Dimension L x W x H (in.)	Wt. (lb)	System Type
GMC 750 UPC	96 x 62 x 69	600	3
GMC 1000 UPC	96 x 62 x 83	700	3
GMC 1300 UPC	96 x 62 x 98	775	3
GMC 2000 UPC	2 (96 x 62 x 83)	1350	4
GMC 2600 UPC	2 (96 x 62 x 98)	1550	4

## Effective solutions ensure compliance

Green Turtle™ is a leading North American provider of wastewater pre-treatment solutions for commercial, institutional and industrial applications. Our technology and expertise help customers meet sanitary sewer regulations while protecting the watershed, public health and communities.

## 30-year warranty

Green Turtle offers a 30-year warranty against corrosion, leaks and structural failure as a standard feature with every Proceptor interceptor. Contact Green Turtle today to learn more about tangible wastewater solutions to meet your needs.



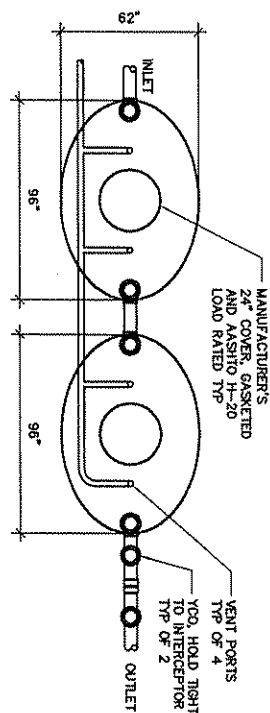
Green Turtle Americas Ltd.

201 South Tryon Street, Suite 1475, Charlotte, NC 28202

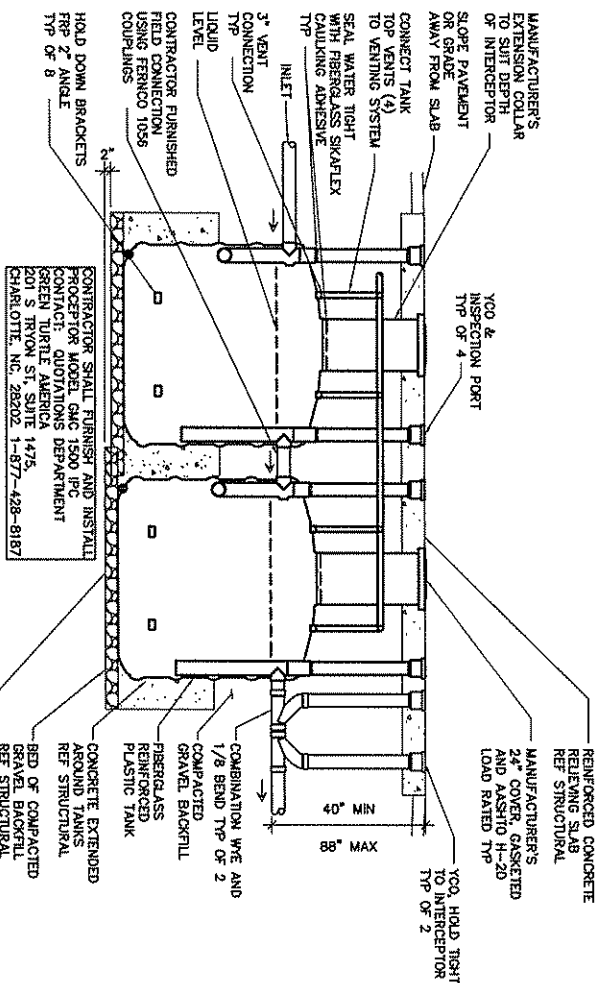
T 704 295 1733 T 877 428 8187 F 704 295 1734

www.greenturtletech.com

A Monteco Company



9 REF-NTS



- NOTES:
1. INSTALL INTERCEPTOR PER MANUFACTURER INSTRUCTIONS.
2. PROVIDE INTERCEPTOR INSTALLATION THAT COMPLIES WITH ASHRAE 90.1-20 LOUO RAINING.
3. VERIFY THE INTERCEPTOR HAS A MINIMUM 12" CLEARANCE OVER MAINHUB BIPOL DEPTH. VERIFY THE INTERCEPTOR IS FIRST LINE IS DEEPER THAN THE MAX DEPTH BEFORE INSTALLING. VERIFY THE INVERT WILL WORK AT THE CONNECTION TO CIVIL LINE WHILE MAINTAINING PROPER SLOPE.
4. PROVIDE SAMPLING PORT, REFER TO PLUMBING PLAN FOR LOCATION.
5. REFER TO PLUMBING PLAN FOR PIPE SIZES.
6. NO SUBSTITUTIONS ALLOWED.

INSTALL SECOND TANK  
2" LOWER TO MATCH  
OUTLET OF FIRST TANK

# OMC 500, 750, 1000, 1300 UPC FOR UPC/IAPMO INSTALLATION DRAWING

## NOTES:

1. REFER TO INSTALLATION PROCEDURE AND INSTALLATION CHECKLIST.
2. PROCEPTOR SEPARATORS MUST BE INSTALLED IN ACCORDANCE WITH ALL RELEVANT FEDERAL, PROVINCIAL/STATE, AND LOCAL CODES INCLUDING LOCAL PLUMBING CODE.
3. US PATENT # 5,746,912; CDN PATENT # 2,195,822

FOR TRAFFIC LOADING CONDITIONS  
REINFORCED CONCRETE RELIEVING SLAB  
DESIGN BY ENGINEER.

Ø 24" FRAME AND COVERS (3)  
SECURED IN CONCRETE

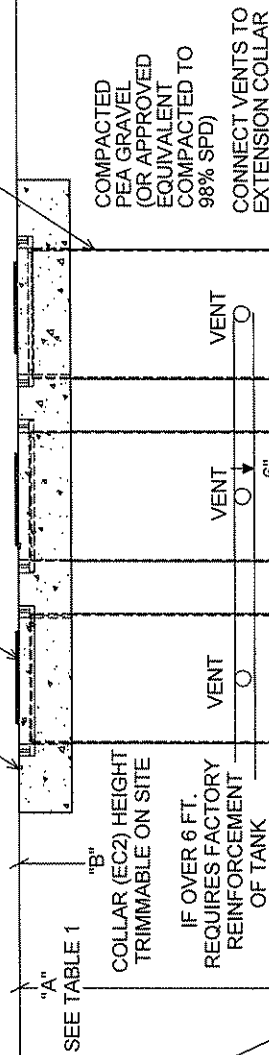


TABLE 2

PROCEPTOR SEPARATOR MODEL	INLET INVERT TO TANK BOTTOM (H*)	HEIGHT OF BUOYANCY SLAB (HBS)	DRY WEIGHT OF TANK
OMC 500 UPC	33"	18"	565 lbs
OMC 750 UPC	46"	19"	600 lbs
OMC 1000 UPC	60"	26"	700 lbs
OMC 1300 UPC	75"	35"	800 lbs

ANTI-BUOYANCY SLAB FOR HIGH WATER TABLE CONDITIONS ONLY  
3000 psi CONCRETE READY MIX POUR 12" HORIZONTALLY ALL AROUND  
BASE OF UNIT TO HEIGHT OF BUOYANCY SLAB (HBS - SEE TABLE 2)

TABLE 1

BURIAL DEPTH	A	B
Max.	7' 6"	6 ft.
Min. with Traffic	36"	18"
Min. no Traffic	24"	** 10"

\*\* MAY VARY DEPENDING ON  
VENT PIPING AND FLOOR SLAB

TITLE: PROCEPTOR OIL SEPARATOR  
INSTALLATION FOR OMC 500, 750,  
1000, 1300 UPC

PROJECT: WO:

OPTIONS:

REV.	DATE	DRAWN
1	SEPTEMBER 20, 2003	L. SIMONS
2	OCTOBER 3, 2006	L. SIMONS
3	JAN. 30, 2007	L. SIMONS
4		
5		
6		
7		
8		
9		
10		

DRAWN BY: F. CHANDLER

DRAWN DATE: 6/18/04

**Proceptor**<sup>TM</sup>  
by **greenturtle**<sup>TM</sup>

US 877 428 8187 CAN 877 966 9444  
www.greenturtletech.com

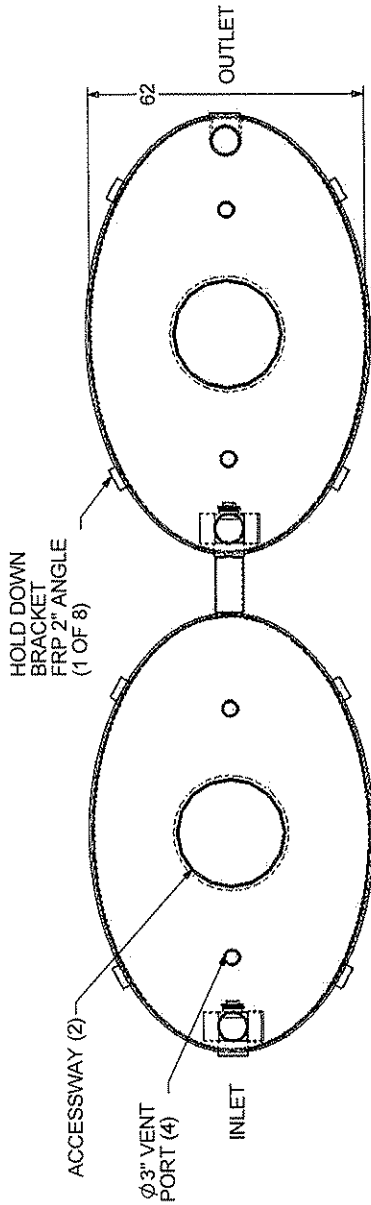
SIZE	DWG. NO.	REV.
A	INSTALL OMC 500-1300 UPC	4

SCALE: 1/32 DO NOT SCALE DRAWING

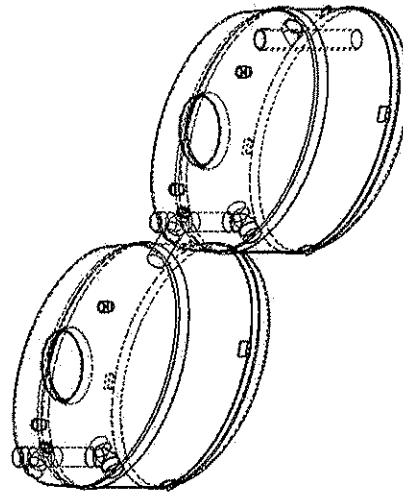
SHEET 1 OF 1

# NOTES:

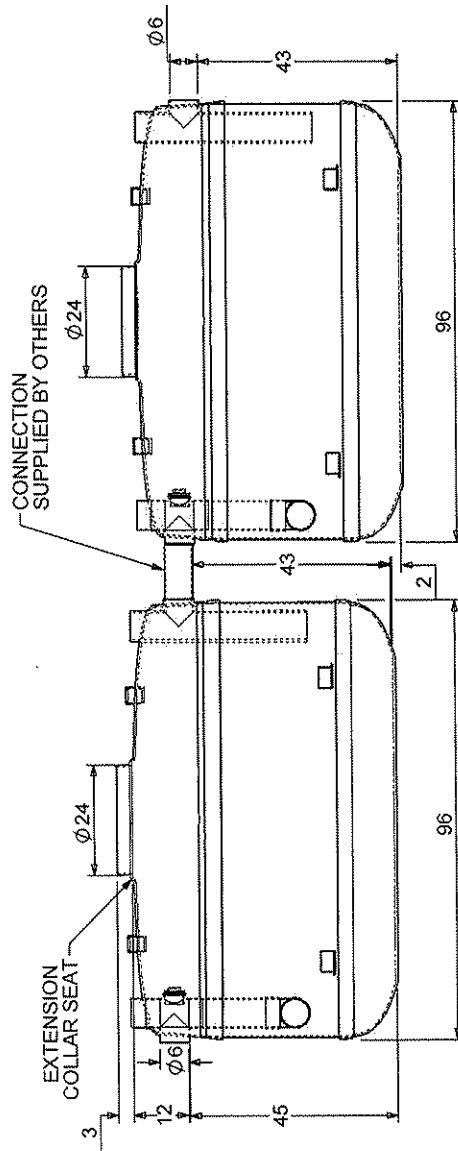
1. FOR GRAVITY APPLICATIONS ONLY.
2. ALL PROCEPTOR UNITS ARE MANUFACTURED WITH FIBERGLASS REINFORCED PLASTICS. PHYSICAL CHARACTERISTICS AND THICKNESS: POLYESTER RESIN AND E GLASS. MINIMUM THICKNESS 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS. MINIMUM BURIAL DEPTH = 24" FOR NON TRAFFIC RATED AND MINIMUM BURIAL DEPTH = 36" FOR TRAFFIC RATED. MAXIMUM BURIAL DEPTH = 7 FEET (GRADE TO INVERT OF INLET) FOR DEEPER INSTALLATIONS CALL GREEN TURTLE FOR CUSTOM REINFORCEMENTS TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTION.
3. ALL PROCEPTOR UNITS ARE MANUFACTURED WITH FIBERGLASS REINFORCED PLASTICS. PHYSICAL CHARACTERISTICS AND THICKNESS: POLYESTER RESIN AND E GLASS. MINIMUM THICKNESS 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS. MINIMUM BURIAL DEPTH = 24" FOR NON TRAFFIC RATED AND MINIMUM BURIAL DEPTH = 36" FOR TRAFFIC RATED. MAXIMUM BURIAL DEPTH = 7 FEET (GRADE TO INVERT OF INLET) FOR DEEPER INSTALLATIONS CALL GREEN TURTLE FOR CUSTOM REINFORCEMENTS TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTION.
4. STAIRCASE AND LADDER ACCESS ARE SOCKET SDR 35 PVC SEWER MATERIAL. SCHEDULE 40 ADAPTORS ADDED FOR ALL PROJECTS IN USA.
5. STANDARD 600 - 3000 UNITS COME STANDARD WITH 6" INLET AND OUTLET. OTHER CUSTOM SIZES AVAILABLE AT EXTRA CHARGE.
6. EXTENSION COLLAR TO BE ORDERED TO MEET FINISHED GRADE. CUT ON SITE FOR FINAL ADJUSTMENT AND CAULKED WITH SIKAFLEX BY CONTRACTOR IF WATER TIGHT SEAL REQUIRED.
7. COVERS AVAILABLE FOR H2O TRAFFIC LOADING. PEDESTRIAN LOADING OR ABOVE GROUND INSTALLATION.
8. UNLIMITED CAPACITY AVAILABLE. CONSULT GREEN TURTLE FOR OTHER SIZES.
9. ALL PROCEPTOR UNITS ARE FACTORY TESTED.
10. 30 YEAR WARRANTY AGAINST LEAKS AND STRUCTURAL FAILURE.
11. U.S. PATENT #5,746,912; CDN PATENT #2,195,822



TOP VIEW



ISOMETRIC VIEW



FRONT VIEW

<b>Proceptor</b> <b>by greenturtle</b> US 877 428 8187 CAN 877 966 9444 www.greenturtletech.com		TITLE: PROCEPTOR F.O.G. SEPARATOR GMC 1500(2) GALLON INTERCEPTOR 6" INLET & OUTLET 24" ACCESSWAY ALL DIMENSIONS IN INCHES PROJECT: WO:		REV. DATE	DRAWN
				1	1
TOTAL WET VOLUME: 1500 GAL MAX. GREASE CAPACITY: 819 GAL MAX. SOLIDS CAPACITY: 401 GAL		OPTIONS: <input checked="" type="checkbox"/> GREASE SENSOR ALARM <input type="checkbox"/> SUCTION PIPE FOR INDOOR INSTALLATION <input type="checkbox"/> ABOVE GROUND INSTALLATION		2	2
				3	3
CONSULT LOCAL AUTHORITIES FOR MINIMUM SIZE OF SEPARATORS		DRAWN BY: E CHANDLER DRAWN DATE 9/14/04		4	4
				5	5
SCALE: 1"=40'		DO NOT SCALE DRAWING		6	6
				7	7
SHEET 1 OF 1		REV. 4		8	8
				9	9
SIZE A		DWG. NO. GMC 1500(2)		10	10
				11	11



**Willard, Larry**

---

**From:** Ken Haven [klh@bgark.com]  
**Sent:** Wednesday, December 08, 2010 9:29 AM  
**To:** Willard, Larry  
**Cc:** Jason Scates  
**Subject:** RE: Sams Club 6652 expansion Frederick, MD  
**Attachments:** GMC2000UPC.pdf; INSTALL GMC 2000 UPC.pdf

We have changed the interceptor to the UPC model which has the number of chambers you requested.

Thanks as always,

Ken Haven  
Benchmark Group Building  
1805 N 2nd St  
Rogers, AR 72756  
Direct: 479-631-5299

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**From:** Willard, Larry [<mailto:LWillard@FrederickCountyMD.gov>]  
**Sent:** Wednesday, December 08, 2010 8:14 AM  
**To:** Ken Haven  
**Cc:** Jason Scates  
**Subject:** RE: Sams Club 6652 expansion Frederick, MD

Ken

Our Plumbing Board will be meeting on December 16, 2010 at 2:00 PM and one of the items for discussion will be this grease trap.

If anyone would be interested in attending they would be welcome.

Larry Willard  
Chief Plumbing Inspector  
Frederick County Department of Permits and Inspections  
30 North Market Street  
Frederick, Md. 21701  
Office 301-600-1094  
Cell 240-674-4122  
Fax 301-600-2309

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**From:** Ken Haven [<mailto:klh@bgark.com>]  
**Sent:** Wednesday, October 20, 2010 1:29 PM  
**To:** Willard, Larry  
**Cc:** Jason Scates  
**Subject:** Sams Club 6652 expansion Frederick, MD

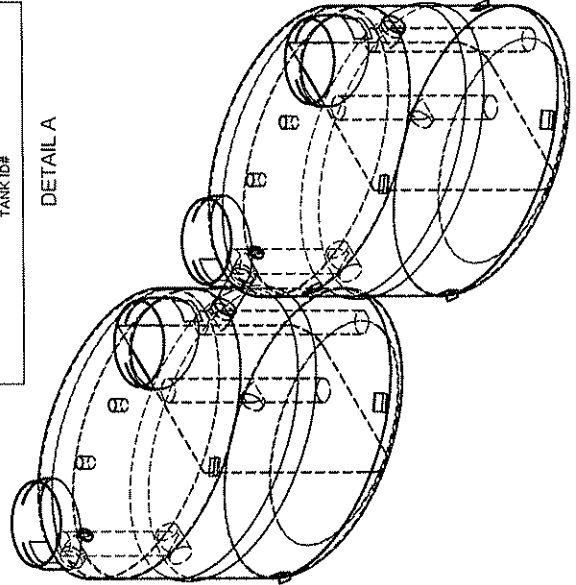
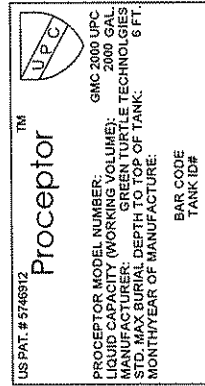
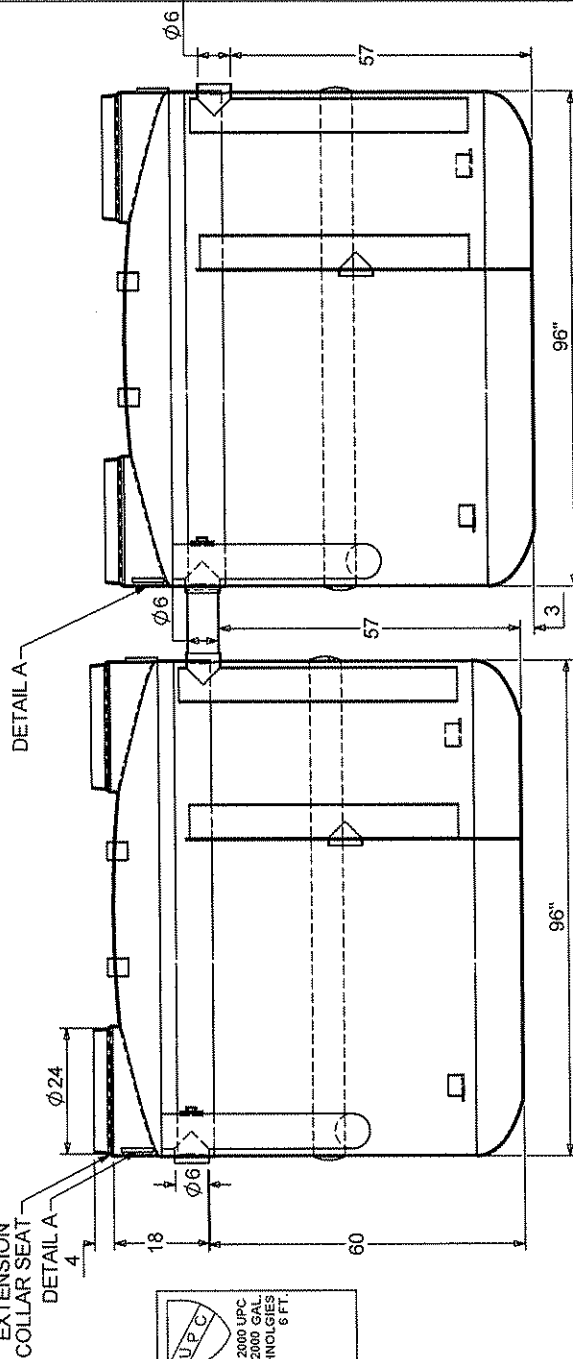
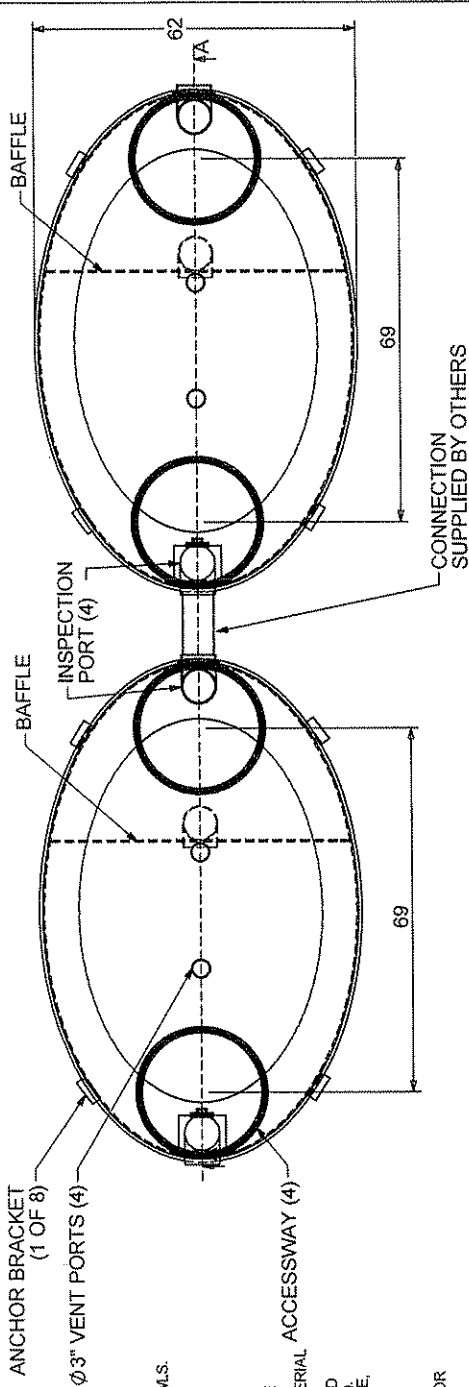
Hello attached is some manufacturer's information on the proposed interceptors, and the details we currently have on our plans, in regards to a recent phone call with Jason Scates for the above mentioned.

Thanks,

Ken Haven  
Benchmark Group Building  
1805 N 2nd St  
Rogers, AR 72756  
Direct: 479-631-5299

# NOTES:

1. FOR GRAVITY APPLICATIONS ONLY.
2. ALL PROCEPTOR UNITS ARE MANUFACTURED WITH FIBERGLASS REINFORCED PLASTICS. PHYSICAL CHARACTERISTICS AND THICKNESS: POLYESTER RESIN AND E GLASS.
3. ASTM D 885-JULC TEST METHOD WITH 1 TESTED. MINIMUM THICKNESS: 1/2" FOR 36" TOP AND BOTTOM BOWLS. MINIMUM BURIAL DEPTH = 24" FOR NON TRAFFIC RATED AND MINIMUM BURIAL DEPTH = 36" FOR TRAFFIC RATED (GRADE TO INVERT OF INLET).
4. MAXIMUM BURIAL DEPTH = 7 FEET 6 INCHES FOR DEEPER INSTALLATIONS CALL GREEN TURTLE FOR CUSTOM REINFORCEMENT.
5. ALL PROCEPTOR UNITS ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTION.
6. STANDARD PIPE SIZES ARE SOCKET SDR 35 PVC SEWER MATERIAL (SCHEDULE 40 ADAPTORS ADDED FOR ALL PROJECTS IN USA).
7. GMC/GMC 500 - 3000 UNITS COME STANDARD WITH 6" INLET AND OUTLET (OTHER CUSTOM SIZES AVAILABLE AT EXTRA CHARGE).
8. EXTENSION COLLAR TO BE ORDERED TO MEET FINISHED GRADE. CUT ON SITE FOR FINAL ADJUSTMENT AND CAULKED WITH SIKAFLEX BY CONTRACTOR IF WATERTIGHT SEAL REQUIRED.
9. COVERS AVAILABLE FOR H2O TRAFFIC LOADING.
10. PEDESTRIAN LOADING OR ABOVE GROUND INSTALLATION. UNLIMITED CAPACITY AVAILABLE. CONSULT GREEN TURTLE FOR OTHER SIZES.
11. ALL PROCEPTOR UNITS ARE FACTORY TESTED.
12. 30 YEAR WARRANTY AGAINST LEAKS, AND STRUCTURAL FAILURE.
13. U.S. PATENT #5,746,912; CDN PATENT #2,195,922



## SECTION A-A SCALE 1:35 FOR UPC/IAPMO INSTALLATIONS

TITLE: PROCEPTOR F.O.G. SEPARATOR		REV. DATE	DRAWN	TM
GMC 2000 UPC		1	SEPTEMBER 20, 2003	L. SIMONS
6" INLET & OUTLET		2	JANUARY 2, 2007	L. SIMONS
24" ACCESSWAY		3		
PROJECT: WO:		4		
OPTIONS:		5		
✓ ABOVE GROUND OPTION		6		
- SIRT AND SCREW ON COVER		7		
SUCTION PIPE FOR INDOOR INSTALLATION		8		
OIL/GREASE SENSOR ALARM		9		
COALESCE (FOR 100ppm TREATMENT)		10		
DRAWN BY: F. CHANDLER		SCALE: 1:35 DO NOT SCALE DRAWING		
DRAWN DATE: 6/27/04		SHEET 1 OF 1		
SIZE DWG. NO.		REV.		
A GMC 2000 UPC		3		
877 428 8187 US 877 966 9444 CAN				
www.greenturtletech.com				

**Proceptor**  
by greenturtle

# GMC 2000 AND 2600 UPC FOR UPC/IAPMO INSTALLATION DRAWING

## NOTES:

1. REFER TO INSTALLATION PROCEDURE AND INSTALLATION CHECKLIST.
2. PROCEPTOR SEPARATORS MUST BE INSTALLED IN ACCORDANCE WITH ALL RELEVANT FEDERAL, PROVINCIAL/STATE, AND LOCAL CODES INCLUDING LOCAL PLUMBING CODE.
3. US PATENT # 5,746,912; CDN PATENT # 2,195,822

"B" = COLLAR (EC2) HEIGHT  
TRIMMABLE ON SITE.  
IF OVER 6 FT. REQUIRES FACTORY  
REINFORCEMENT OF TANK

VENTING PER  
LOCAL  
PLUMBING  
CODE

FOR TRAFFIC LOADING CONDITIONS  
REINFORCED CONCRETE RELIEVING SLAB  
DESIGN BY ENGINEER.

CONNECTION  
ON SITE

Ø 24" FRAME AND COVER  
SECURED IN CONCRETE

CONNECT TANK TOP VENTS  
TO VENTING SYSTEM  
(SEE ALSO NOTE 2)

COMPACTED  
PEA GRAVEL  
(OR APPROVED  
EQUIVALENT  
COMPACTED  
TO 98% SPD)

OUTLET

LENGTH 96" WIDTH 62"

LENGTH 96" WIDTH 62"

\* ACTUAL  
HEIGHT  
MAY VARY  
SLIGHTLY.

H \*

H - 6"

3000 PSI CONCRETE READY MIX POUR 12" AROUND  
BASE OF UNIT TO HEIGHT OF BUOYANCY SLAB - (HBS SEE TABLE 2)  
(FOR HIGH WATER CONDITIONS ONLY)

INSTALL SECOND TANK  
3" LOWER TO MATCH  
OUTLET OF FIRST TANK

MIN. 6" COMPACTED PEA GRAVEL  
(OR APPROVED BACKFILL  
COMPACTED TO 98% SPD)

TABLE 2

PROCEPTOR F.O.G. SEPARATOR MODEL	INLET INVERT TO TANK BOTTOM (H*)	HEIGHT OF BUOYANCY SLAB (HBS)	DRY WEIGHT OF UNIT
GMC 2000 UPC	60"	26"	1350 lbs
GMC 2600 UPC	75"	35"	1550 lbs

BURIAL DEPTH	A	B
Max.	7' 6"	6 ft.
Min. with Traffic	36"	18"
Min. no Traffic	24"	** 10"

\*\* MAY VARY DEPENDING ON VENT  
PIPING AND FLOOR SLAB

TITLE: PROCEPTOR F.O.G. SEPARATOR  
INSTALLATION FOR GMC 2000 AND  
2600 UPC

PROJECT: WO:

OPTIONS:

REV.	DATE	DRAWN
1		
2		
3	JUNE 1, 2005	L. SIMKINS
4	SEPTEMBER 20, 2005	L. SIMKINS
5	OCTOBER 26, 2006	L. SIMKINS
6	FEBRUARY 5, 2007	L. SIMKINS
7	AUGUST 27, 2007	L. SIMKINS
8	OCTOBER 16, 2007	L. SIMKINS
9		
10		

DRAWN BY: F. CHANDLER

DRAWN DATE 4/19/04

**Proceptor**<sup>TM</sup>  
by **greenturtle**<sup>TM</sup>

US 877 428 8187 CAN 877 966 9444  
www.greenturtletech.com

SEE DWG. NO.

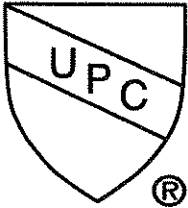
**A** INSTALL GMC 2000-2600 UPC

REV. 8

SCALE: 1/32 DO NOT SCALE DRAWING SHEET 1 OF 2

# IAPMO RESEARCH AND TESTING, INC.

5001 East Philadelphia Street, Ontario, California 91761-2816 • (909) 472-4100 Fax (909) 472-4244 • [www.iapmo.org](http://www.iapmo.org)



## CERTIFICATE OF LISTING

IAPMO Research and Testing, Inc. is a product certification body which tests and inspects samples taken from the supplier's stock or from the market or a combination of both to verify compliance to the requirements of applicable codes and standards. This activity is coupled with periodic surveillance of the supplier's factory and warehouses as well as the assessment of the supplier's Quality Assurance System. This listing is subject to the conditions set forth in the characteristics below and is not to be construed as any recommendation, assurance or guarantee by IAPMO Research and Testing, Inc. of the product acceptance by Authorities Having Jurisdiction.

Effective Date: April 2010 -Rev. 6/10/2010- Void After: April 2011  
Product: Shower Pan Liner File No. 3996  
Issued To: Mapei Corporation  
2900 Francis-hughes  
Laval, QC QUEBEC H7L 3J5  
Canada

IDENTIFICATION: Manufacturer's name or trademark, and the UPC® certification mark.

CHARACTERISTICS: Load bearing, bonded, waterproof membranes for thin-set ceramic tile and dimension stone installation. To be installed in accordance with the manufacturers instruction and the latest Uniform Plumbing Code.

Products comply with the applicable sections of the latest edition of the Uniform Plumbing Code®. Manufactured in compliance with ANSI A118.10-2008.

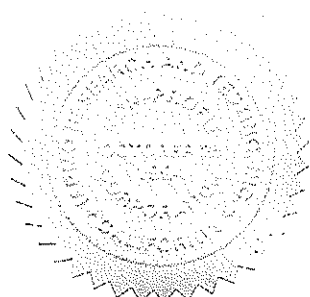
Products listed on this certificate have been tested by an IAPMO R&T recognized laboratory. This recognition has been granted based upon the laboratory's compliance to the applicable requirements of ISO/IEC 17025.

  
Chairman, Product Certification Committee

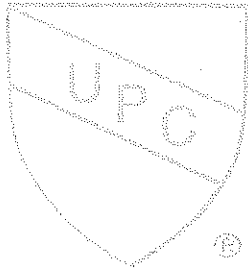
  
CEO, The IAPMO Group

For the most accurate and updated information please visit <http://pld.iapmo.org/3996>

This listing is for the period indicated herein and is void after the date shown above. Any change in material, manufacturing process, marking or design without having first obtained the approval of the Product Certification Committee, or any evidence of non-compliance with applicable codes and standards or of inferior workmanship, may be deemed sufficient cause for revocation of this listing. Reproduction of or reference to this form for advertising purposes may be made only by specific written permission of IAPMO Research and Testing, Inc. Any alteration of this certificate could be grounds for revocation of the listing.



DOC#081A



IAPMO RESEARCH AND TESTING, INC.  
CERTIFICATE OF LISTING

Page 2

-Rev. 6/10/2010-

Void After: April 2011

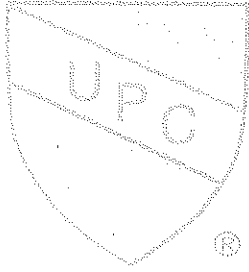
Product: Shower Pan Liner  
Issued To: Mapei Corporation

File No. 3996

MODELS:

Water Proof Membrane

Mapelastic 400  
Mapelastic 315  
Mapelastic HPG  
Mapelastic  
Mapelastic Smart  
Mapelastic Aquadefense  
NA 1740



**IAPMO RESEARCH AND TESTING, INC.**  
**CERTIFICATE OF LISTING**

Page 3

-Rev. 6/10/2010-

Void After: April 2011

Product: Shower Pan Liner

File No. 3996

Issued To: Mapei Corporation

ADDITIONAL COMPANY INFO:

**Willard, Larry**

---

**From:** Ridgell, Richard  
**Sent:** Thursday, December 02, 2010 10:55 AM  
**To:** Mitchell, Bryon; Willard, Larry  
**Subject:** FW: IAPMO

FYI  
Richard

---

**From:** es [<mailto:es@iccsafe.org>]  
**Sent:** Thursday, December 02, 2010 10:26 AM  
**To:** Ridgell, Richard  
**Subject:** RE: IAPMO

Dear Richard,

IAPMO is a competitor of ICC-ES, so we each have our own listings. IAPMO bases their evaluations on the UPC and UMC, whereas ICC-ES evaluates to the International Codes, IPC & IMC. It is ultimately up to the code official to decide which listing he or she wants to approve.

Please let me know if you have any other questions.

Thank you,

Maria Reyes  
ICC Evaluation Service, LLC

***Free Download of Energy Code Available.*** ICC has been awarded federal funding to provide the 2009 International Energy Conservation Code as part of an initiative to meet nationwide energy-efficiency goals through the Building Technologies Program and the American Recovery and Reinvestment Act. Get yours today – [click here!](#)

---

**From:** Ridgell, Richard [<mailto:RRidgell@FrederickCountyMD.gov>]  
**Sent:** Thursday, December 02, 2010 5:49 AM  
**To:** es  
**Subject:** IAPMO

Does ICC ES recognize IAPMO Listed products ( for example Mapelastc HPG shower pan liners) ?  
Thank You

Richard Ridgell MCP/CBO  
Building Safety Plans Reviewer  
Frederick County Government  
Office of Life Safety  
30 North Market Street  
Frederick, MD 21701  
Ph. 301-600-1643  
Fax. 301-600-3464





# Mapelastastic<sup>TM</sup> HPG

## Flexible Waterproofing and Crack-Isolation Membrane



for  
Larry  
Willard

### DESCRIPTION

Mapelastastic HPG is a ready-to-use, highly flexible, liquid acrylic waterproofing membrane for installation under ceramic tile or stone on residential and light commercial interior floors and walls. Applied with a roller, trowel or brush, Mapelastastic HPG has excellent compatibility with cement-based mortars. When installed with MAPEI's *Fiberglass Mesh*, Mapelastastic HPG can also be used as a crack-isolation membrane and meets ANSI A118.10 standards for waterproofing. In addition, Mapelastastic HPG is IAPMO-listed for use as a shower-pan liner.

### FEATURES AND BENEFITS

- Dual protection: Provides waterproofing and crack isolation
- Prevents in-plane floor cracks from transmitting through tile or stone
- Compatible with MAPEI's *Fiberglass Mesh* and *Mapeband<sup>TM</sup>* accessories
- Compatible with MAPEI mortars and grouts for complete system protection
- Durable and flexible; bonds to a wide range of surfaces
- Ready to use; easy to apply with roller, trowel or brush
- Install tile or stone after curing for 16 to 24 hours.
- Flood-test after 72-hour cure.

### INDUSTRY STANDARDS AND APPROVALS

ANSI A118.10: Exceeds

ASTM C627 (Robinson): Extra heavy service rating

### LEED (Version 3.0) Points Contribution

### LEED Points

MR Credit 5, Regional Materials*	Up to 2 points
IEQ Credit 4.2, Low-Emitting Materials – Paints & Coatings	1 point

\* Using this MAPEI product may help contribute to LEED certification of projects in the categories shown above. Points are awarded based on contributions of all project materials.

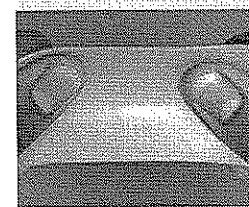
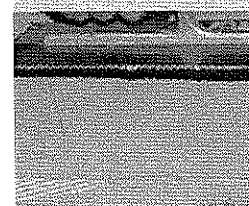
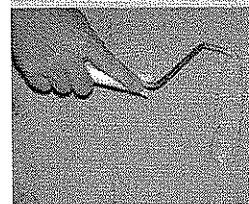
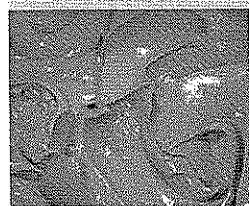
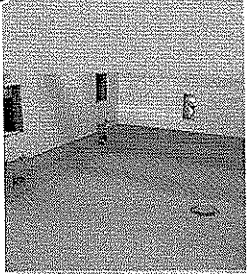
### WHERE TO USE

- For interior waterproofing vertically and horizontally behind tile and stone installations in residential to light commercial bathrooms, restrooms, kitchens and laundry rooms
- As a crack-isolation membrane over existing in-plane cracks up to 1/8" (3 mm) (see "One-Coat System" instructions) and for handling up to an additional 1/8" (3 mm) in-plane movement (see "Two-Coat System" instructions) when applied at the appropriate application thickness and system (see section "Pre-treat existing in-plane cracks" below)

### LIMITATIONS

- Do not use over any substrates containing asbestos.
- Do not apply directly over gypsum-based patching or leveling compounds (see "Suitable Substrates" section below), sheet vinyl, vinyl composition tile (VCT), self-stick tile, laminate surfaces, metal or fiberglass surfaces, or poured epoxy floors.
- Do not apply directly over substrates consisting of plank wood flooring, presswood, particleboard, chipboard, oriented strand board (OSB), pressure-treated plywood, oil-treated plywood, Luan plywood, Masonite

# Mapelastic<sup>TM</sup> HPG



- or other dimensionally unstable materials.
- Do not use over cracks or control joints subject to out-of-plane movement, or in-plane movement greater than 1/8" (3 mm).
- Do not use where excessive substrate moisture and/or where negative hydrostatic pressure exists. The maximum amount of acceptable moisture in a concrete substrate for *Mapelastic HPG* is 3 lbs. per 1,000 sq. ft. (1,36 kg per 92,9 m<sup>2</sup>) per 24 hours as determined by a calcium chloride test kit. When the moisture vapor emission rate (MVER) is in excess of 3 lbs. per 1,000 sq. ft. (1,36 kg per 92,9 m<sup>2</sup>) per 24 hours, contact MAPEI's Technical Services for recommendations.
- Do not use for constant immersion, on plywood in exterior applications, as a roof deck membrane, or as a wear surface.
- Do not use with solvent-based materials.
- Do not use premixed mastics to set tile over *Mapelastic HPG*.
- Use only a MAPEI epoxy or urethane setting material when installing moisture-sensitive natural stone or manmade tiles, such as agglomerates, over *Mapelastic HPG*.

Note: On occasion, dimensionally weak natural stone tile that normally would not be categorized as moisture-sensitive (such as travertine, limestone, marble and agglomerates) can exhibit doming, cupping or curling when using wet-set or medium-bed mortar methods of installation over impervious sheet membranes such as *Mapelastic HPG*. For this reason, areas requiring more than 3/8" (10 mm) buildup require the use of a self-leveling underlayment or cured mud-bed application before installation of *Mapelastic HPG*. When installing natural stone, always do a mockup area of the proposed installation and allow materials to reach full cure to ensure achieving the desired effect. For more information regarding these methods or materials, contact MAPEI's Technical Services before installation or design.

## SUITABLE SUBSTRATES

(interior only; properly prepared)

- Fully cured concrete at least 28 days old (see "Limitations")
- Masonry walls of cement block or brick
- Cured cement mortar beds and leveling coats
- Cement backer units (CBUs)
- Well-bonded, unglazed ceramic and porcelain tile, quarry tile and cement terrazzo floors.

Note: Existing unglazed ceramic tile must be abraded, and existing cement terrazzo must be mechanically profiled. Both must be skimcoated with an appropriate MAPEI latex or polymer-modified mortar.

- Well-bonded, unglazed ceramic, porcelain and quarry tile
- Gypsum wallboard (walls only, primed, in approved application areas only)
- Properly prepared radiant-heated, cement-based substrates
- Exterior-grade plywood for interior residential floors and countertops in dry areas only. Plywood must be Group 1, CC-type, conforming to APA classification and U.S. Product Standard PS 1-95 or COFI exterior plywood "Select" or "Select Tight Face" conforming to CSA-0121 standard for Douglas fir. (See TCA Handbook for additional information and following statement regarding deflection.)
- PVC, copper, brass, stainless steel penetrations (abraded)

Consult MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

## Tile Council of North America (TCNA) Statement on Deflection Criteria

Floor systems, including the framing system and subfloor panels, over which tile will be installed should be in conformance with the IRC [International Residential Code] for residential applications, the IBC [International Building Code] for commercial applications, or applicable building codes.

Note: The owner should communicate in writing to the project design professional and general contractor the "intended use" of the tile installation, in order to enable the project design professional and general contractor to make necessary allowances for the expected live load, concentrated loads, impact loads, and dead loads including the weight of the tile and setting bed. The tile installer shall not be responsible for any floor framing or subfloor installation not compliant with applicable building codes, unless the tile installer or tile contractor designs and installs the floor framing or subfloor.

## SURFACE PREPARATION

- Apply when substrate and ambient temperatures are between 50°F and 95°F (10°C and 35°C).
- All suitable substrates must be smooth, structurally sound and free of any substance that could prevent adhesion.
- Do not use chemical means (acid etching or stripping) to prepare approved substrates. Use mechanical methods only.
- To remove any bond-inhibiting materials, concrete substrates should be mechanically cleaned and prepared by diamond-cup grinding or other engineer-approved

methods to obtain the International Concrete Repair Institute (ICRI) concrete surface profile #2. When concrete requires more mechanical preparation, the profile will typically increase. In such cases, the surface can be made smooth by applying coats of MAPEI's *Planipatch*®.

- For details, see MAPEI's "Surface Preparation Requirements" document for tile and stone installations at [www.mapei.com](http://www.mapei.com), or contact MAPEI's Technical Services Department.

## MIXING

*Mapelast*ic HPG is ready to use. No additional mixing is required.

## PRODUCT APPLICATION

### A. One-Coat System – For General Waterproofing and 1/8" (3 mm) In-Plane Crack Isolation

#### Pre-treat existing in-plane cracks, up to 1/8" (3 mm) wide

1. For expansion and control joints, see "Expansion and Control Joints" section.
2. Use a 1/8" (3 mm) V-notched trowel, short-nap (3/8" [10 mm]) roller or paintbrush to apply *Mapelast*ic HPG at 40 mils (1 mm) in thickness and about 13" (33 cm) in width, centered over the cracks.
3. Embed a 12" (30 cm) wide piece of MAPEI's *Fiberglass Mesh*, with a roller or the trowel's flat side, into the fresh *Mapelast*ic HPG. Overlap all mesh seams by 2" (5 cm).
4. Immediately top-coat the mesh with additional *Mapelast*ic HPG to create a uniform, void-free surface.

#### Pre-treat coves and corners (within area being waterproofed)

1. Cut a 12" (30 cm) wide piece of MAPEI's *Fiberglass Mesh* to length. Fold in half (to enable tight fit on inside or outside corner). Set aside.  
Note: The *Mapeband* cove roll (measuring 4.75" x 163 ft. [12 cm x 49.7 m]) may be used instead of MAPEI's *Fiberglass Mesh* to provide a durable, flexible transition at problems areas such as coves (floor/wall intersections) and corners.
2. Use 1/8" (3 mm) V-notched trowel, short-nap (3/8" [10 mm]) roller or paintbrush to apply *Mapelast*ic HPG at 40 mils (1 mm) thick at least 8" to each side of the cove or corner.
3. Embed MAPEI's *Fiberglass Mesh* (or *Mapeband*) with the roller or the trowel's flat side into fresh *Mapelast*ic HPG. Overlap all seams by 2" (5 cm).
4. Immediately top-coat the mesh (or *Mapeband*) with additional *Mapelast*ic HPG to create a uniform, void-free surface.

#### Pre-treat drains

1. Drains must have a locking (bolt-down) collar.
2. If the locking collar is covered with concrete, remove concrete to a radius of 10" to 12" (25 to 30 cm) around the drain and angling down toward drain flange.
3. After the drain flange is exposed, loosen bolts on the locking collar and remove the collar from the flange.
4. Using *Planipatch*, smooth the area around the drain where concrete was removed.
5. Sand the flange top and clean.

6. Allow for a 16" x 16" (41 x 41 cm) square piece of MAPEI's *Fiberglass Mesh* around drain. Note: *Mapeband* drain flashing (available in convenient 16" x 16" [41 x 41 cm] size) may be used instead of MAPEI's *Fiberglass Mesh* to provide a durable, flexible transition at problems areas like drain/floor intersections.
7. Use a 1/8" (3 mm) V-notched trowel, short-nap (3/8" [10 mm]) roller or paintbrush, to apply *Mapelast*ic HPG at 40 mils (1 mm) thick to an area larger than the pre-cut MAPEI's *Fiberglass Mesh* (or *Mapeband* drain flashing).
8. Embed the pre-cut MAPEI's *Fiberglass Mesh* (or *Mapeband* drain flashing) with the roller or a trowel's flat side into fresh *Mapelast*ic HPG.
9. Immediately top-coat MAPEI's *Fiberglass Mesh* (or *Mapeband* drain flashing) with *Mapelast*ic HPG to create a uniform, void-free surface.

#### Complete the waterproofing system

1. Wait until all pre-treated areas are dry to touch (after about 4 to 6 hours).
2. Use 1/8" (3 mm) V-notched trowel, short-nap (3/8" [10 mm]) roller or paintbrush to apply *Mapelast*ic HPG over area to be waterproofed at 40 mils (1 mm) thick.
3. Let *Mapelast*ic HPG dry for 4 to 6 hours.
4. Check for pinholes. Recoat as needed.
5. Let *Mapelast*ic HPG dry for 16 to 24 hours at an ambient temperature of 73°F (23°C). It is then ready to receive tile, stone or bonded mortar toppings. Cure times depend on ambient temperature, substrate temperature, substrate porosity and jobsite humidity. Expect shorter drying times in warmer jobsite conditions, and longer drying times in cooler jobsite conditions.
6. With a knife, cut out the mesh (or drain flashing) that covers the drain throat. Cut out bolt holes.
7. Lift up the membrane from the flange at the throat. Apply a bead of commercial-grade silicone caulk around the top outer edge of the drain flange, and then set and bolt down the drain collar.
8. Fill the depressed area around the drain with *Mapecem*® *Quickpatch* or *Planitop*® X to the desired height.
9. Let *Mapelast*ic HPG cure for 16 to 24 hours.
10. Install ceramic tile or stone with a polymer-modified or epoxy mortar. See the section "Install Ceramic Tile or Stone" below.

### B. Two-Coat System – For IAPMO-Listed Shower Pan Liner Installation and 1/8" (3 mm) Additional In-Plane Movement

#### Pre-treat cracks, coves corners and drains

1. Pre-treat existing cracks, coves, corners, drains per the pre-treating sections above.
2. Wait until all pre-treated areas are dry to touch (after about 4 to 6 hours).

#### Complete the waterproofing system

1. Pre-cut pieces of MAPEI's *Fiberglass Mesh* to cover the entire area that will be waterproofed. Set aside.
2. Use a 1/8" (3 mm) V-notched trowel, short-nap (3/8" [10 mm]) roller or paintbrush to apply *Mapelast*ic HPG at 40 mils (1 mm) thick, to create a uniform, void-free surface.
3. Embed pre-cut pieces of MAPEI's *Fiberglass Mesh* with a roller or a trowel's flat side into the fresh *Mapelast*ic HPG. Overlap all seams by 2" (5 cm).

4. Wait until all pre-treated areas are dry to touch (after about 4 to 6 hours).
5. Apply a topcoat of *Mapelastlic HPG* at 10 mils (0,25 mm) thick over entire area that is to be waterproofed.
6. With a knife, cut out MAPEI's *Fiberglass Mesh* (or *Mapeband* drain flashing) that covers the drain throat. Cut out bolt holes.
7. Lift up the membrane from the flange at the throat. Apply a bead of commercial-grade silicone caulk around the top outer edge of the drain flange, and then set and bolt down the drain collar.
8. Fill the depressed area around the drain with *Mapecem Quickpatch* or *Planitop X* to the desired height.
9. Let the application dry for 72 hours before flood-testing per the ASTM standard.
10. Plug the drain and flood-test.
11. Install ceramic tile or stone per the section "Install Ceramic Tile or Stone" below.

## INSTALL CERAMIC TILE OR STONE

Use an appropriate MAPEI latex polymer-modified mortar that meets ANSI A118.4 or ANSI A118.11 industry standards, or an epoxy adhesive that meets ANSI A118.3 standards.

Note: When installing tile larger than 18" x 18" (46 x 46 cm), longer mortar-cure times may be required before tile can be grouted or walked on. For shorter turnaround times when installing larger tile, use a MAPEI rapid-set mortar such as *Ultracontact™ RS* or *Granirapid®*.

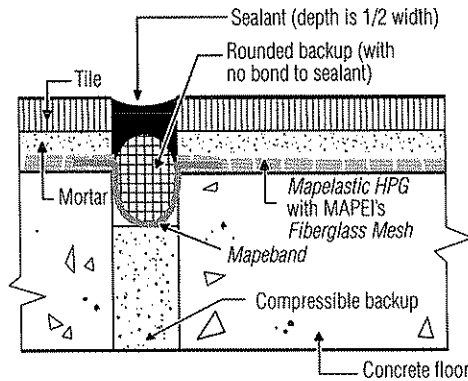
## GROUTING

Select an appropriate MAPEI Portland-cement grout that meets ANSI A118.6 or ANSI A118.7 industry standards, or an epoxy grout that meets ANSI A118.3 standards. For additional information, instructions and recommended protection, see the respective Technical Data Sheet for the grout selected.

## CLEANUP

1. Fresh material can be cleaned with mild, soapy, warm water.
2. Cured material must be mechanically removed.

## EXPANSION AND CONTROL JOINTS



1. Do not cover any substrate expansion joint or control joints with mortar or tiles.  
Provide for expansion and control joints where specified per the most current TCA handbook for ceramic tile installation, Detail EJ-171 or TTMAC Tile Installation Manual, Detail 301MJ.
2. If waterproofing integrity is required in expansion and control joints, provide per the accompanying diagram. *Mapeband* cove roll can be bonded to both sides of the joint and filled with appropriate joint sealant or an expansion molding system.
3. Protect tilework with metal strips (edge metal) along both edges of structural building expansion joints.
4. When necessary, cut tiles along both edges of the expansion joints. Do not allow tile or mortar to overlap the joints.
5. Install the specified compressible bead and sealant into all expansion and control joints.

Contact MAPEI's Technical Services for more information.

**Product Performance Properties at 73°F (23°C) and 50% relative humidity**

Elongation (ASTM D412)	150%
Viscosity	About 250,000 cps
Direct tensile bond strength (ASTM D4541)	> 175 psi (1,21 MPa)
VOCs	9 g/L

**Shelf Life and Application Properties**

Color (cured <i>Mapelastick HPG</i> )	Light blue
Color (MAPEI's <i>Fiberglass Mesh</i> )	White
Shelf life	2 years (when stored in original, unopened container)
Storage	Store in cool, dry place. Protect from freezing.
Drying time between coats	4 to 6 hours
Cure time before installing ceramic tile or stone	16 to 24 hours
Cure time before flood-testing	72 hours
Application temperature range	50°F to 95°F (10°C to 35°C)
Crack-isolation protection (one-coat system, with no mesh in field)	Existing in-plane cracks up to 1/8" (3 mm)
Crack-isolation protection (two-coat system with mesh)	1/8" (3 mm) of additional in-plane movement

**Final Performance Per ANSI A118.10 – Waterproofing Membranes for Thin-Set Ceramic Tile**

4.1, Fungus and microorganism resistance	Complies
4.2, Seam strength	Exceeds
4.3, Breaking strength	Exceeds
4.4, Dimensional stability	Exceeds
4.5, Waterproofness	Complies (no moisture penetration)
5.3, Shear strength at 7 days	Exceeds
5.4, Water immersion shear strength at 7 days	Exceeds
5.5, Shear strength at 4 weeks	Exceeds
5.6, Shear strength at 12 weeks	Exceeds
5.7, Water immersion shear strength at 100 days	Exceeds

**Final Performance Per ANSI A118.12 – Crack-Isolation Membranes for Thin-Set Ceramic Tile**

4.1, Fungus and microorganism resistance	Complies
5.1.3, Shear strength at 7 days	Exceeds
5.1.4, Water immersion shear strength at 7 days	Exceeds
5.1.5, Shear strength at 4 weeks	Exceeds
5.1.6, Shear strength after accelerated aging	Exceeds
5.2.3, Point load resistance after 28 days' cure	Exceeds
5.3, Robinson floor test (service rating)	Extra heavy

**Type of Installation And Coverage**

Method	Minimum Thickness	MAPEI's <i>Fiberglass Mesh</i> Required	Approximate Coverage*
<b>1-coat system</b> (general waterproofing and crack isolation)	40 mils (1 mm)	Over cracks, coves/corners, around drains	40 sq. ft. per U.S. gal. (0,98 m² per L)
<b>2-coat system</b> (for IAPMO shower pan liner installation)	50 mils (1,2 mm) = 1st coat at 40 mils (1 mm), 2nd coat at 10 mils (0,25 mm)	Over cracks, coves/corners, around drains, entire floor	32 sq. ft. per U.S. gal. (0,78 m² per L)

\* Depending on concrete profile and porosity

**Mapelastick<sup>TM</sup>  
HPG**



# Mapelastic<sup>™</sup> HPG



## Packaging (Mapelastic HPG)

Product Code	Size	Approximate Product Coverage*
35553000	Pail: 1 U.S. gal. (3,79 L)	At 1 coat: 40 sq. ft. (3,72 m <sup>2</sup> ) At 2 coats: 32 sq. ft. (2,97 m <sup>2</sup> )
35568000	Pail: 5 U.S. gals. (18,9 L)	At 1 coat: 200 sq. ft. (18,6 m <sup>2</sup> ) At 2 coats: 160 sq. ft. (14,9 m <sup>2</sup> )

\* Coverages shown are for estimating purposes only. Actual jobsite coverage depends on substrate conditions, and type of roller or brush used.

## Packaging (MAPEI's Fiberglass Mesh)

Product Code	Size	Approximate Product Coverage
8040003	Roll: 1 ft. x 150 ft. (0,30 x 45,7 m)	150 sq. ft. (13,9 m <sup>2</sup> )
03201000	Roll: 39.4 inches x 15 ft. (1 x 4,57 m)	49.2 sq. ft. (4,57 m <sup>2</sup> )
03101000	Roll: 39.4 inches x 75 ft. (1 x 22,9 m)	246 sq. ft. (22,9 m <sup>2</sup> )
8040002	Roll: 39.4 inches x 328 ft. (1 x 49,7 m)	1075 sq. ft. (99,9 m <sup>2</sup> )

## Packaging (MAPEI's Mapeband)

Product Code	Size
02101000	Drain flashing (blue): 16.5" x 16.5" (42 x 42 cm)
02401000	Cove roll (blue): 4.75" x 163 ft. (12 cm x 49,7 m)

Refer to the MSDS for specific data related to VOCs, health and safety, and handling of product.

## STATEMENT OF RESPONSIBILITY

Before using, user shall determine the suitability of the product for its intended use and user alone assumes all risks and liability whatsoever in connection therewith. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

We proudly support the following industry organizations:



**MAPEI Headquarters of the Americas**  
1144 East Newport Center Drive  
Deerfield Beach, Florida 33442  
Phone: 1-888-US-MAPEI  
(1-888-876-2734)

**Technical Services**  
1-800-992-6273 (U.S. and Puerto Rico)  
1-800-361-9309 (Canada)  
**Customer Service**  
1-800-42-MAPEI (1-800-426-2734)

For the most current **BEST-BACKED<sup>™</sup>** product data and warranty information, visit [www.mapei.com](http://www.mapei.com).

**Edition Date:** March 11, 2010  
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| [Arcat.com](#)

## SECTION 09305

## TILE AND STONE SETTING MATERIALS AND ACCESSORIES

**\*\* NOTE TO SPECIFIER \*\*** MAPEI Americas U.S.A.; mortars and grouts for ceramic tile, stone, porcelain, and other materials.

This section is based on the products of MAPEI Americas U.S.A., which is located at:  
1144 E. Newport Center Rd.  
Deerfield Beach, FL 33442  
Toll Free Tel: 800-42-MAPEI  
Tel: 954-246-8888  
Fax: 954-246-8801  
Email: [techservicerequests@mapei.com](mailto:techservicerequests@mapei.com)  
Web: [www.mapei.com](http://www.mapei.com)

This section is based on the products of MAPEI Inc. Canada, which is located at:  
2900 Francis-Hughes  
Laval, PQ, Canada H7L3J5  
Tel: 450-662-1212  
Fax: 450-662-0444  
Email: [tservicesCA@mapei.com](mailto:tservicesCA@mapei.com)  
Web: [www.mapei.ca](http://www.mapei.ca)

MAPEI manufactures a wide range of high performance tile and stone setting materials, many of which are specifically designed for difficult application conditions. Specifiers are urged to consult both the manufacturer's technical literature and the Tile Council of North America (TCNA) 'Handbook for Ceramic Tile Installation' for assistance in selection of products.

## PART 1 GENERAL

## 1.1 SECTION INCLUDES

- A. Tile and stone setting mortars and adhesives.
- B. Grout for tile and stone.
- C. Waterproofing membrane for tile and stone.
- D. Crack isolation membrane for tile and stone.

## 1.2 RELATED SECTIONS

**\*\* NOTE TO SPECIFIER \*\*** This section does not include any tile or stone materials; be sure that the required tile or stone materials are specified in another section. Delete sections below not relevant to this project; add others as required.

- A. Section 09300 - Tile: Ceramic tile materials.
- B. Section 09380 - Cut Natural Stone Tile: Stone tile materials.

## 1.3 REFERENCES

**\*\* NOTE TO SPECIFIER \*\*** Delete references below that are not actually required by the text of the edited section; add others as required.

- A. ANSI A108 Series/A118 Series - American National Standards for Installation of Ceramic Tile.
- B. ANSI A136.1 - American National Standard for Organic Adhesives for Installation of Ceramic Tile.
- C. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar.
- D. ASTM C 150 - Standard Specification for Portland Cement.
- E. TCA (HB) - Handbook for Ceramic Tile Installation; Tile Council of America.
- F. ISO 13007 - International Standards Organization; classification for Grout and Adhesives.

## 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. [ [Product Data](#) ]: Manufacturer's technical information for each product specified.

- C. Samples: Color charts for selection of grout.
- D. Installation Instructions: Manufacturer's printed instructions for each product.

## 1.5 QUALITY ASSURANCE

- A. Provide tile grout, setting materials, additives, and factory-prepared dry-set mortars from the same manufacturer.

## 1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Prevent damage or contamination to materials by water, freezing, foreign matter or other causes.
- B. Do not use frozen materials unless specifically allowed by manufacturer.
- C. Deliver and store materials on site at least 24 hours before work begins.
- D. Provide heated and dry storage facilities on site.

## 1.7 PROJECT CONDITIONS

**\*\* NOTE TO SPECIFIER \*\*** Environmental conditions may have an effect on the final color of Portland cement grouts.

- A. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.
- B. Vent temporary heaters to exterior to prevent damage to tilework from carbon dioxide build-up.

**\*\* NOTE TO SPECIFIER \*\*** Epoxy grouts require higher temperatures for successful installation.

- C. Maintain temperatures at not less than 50 deg F (10 deg C) in tiled areas during installation and for 7 days after completion, unless higher temperatures are required by referenced installation standards or manufacturer's written instructions.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: MAPEI Americas U.S.A., 1144 E. Newport Center Rd., Deerfield Beach, FL 33442; ASD. Toll Free Tel: 800-42-MAPEI; Tel: 954-246-8888; Fax: 954-246-8801; Email: [techservices@mapei.com](mailto:techservices@mapei.com); Web: [www.mapei.com](http://www.mapei.com)
- B. Acceptable Manufacturer: MAPEI, Inc. Canada, 2900 Francis-Hughes, Laval, PQ, Canada H7L3J5; ASD. Tel: 450-662-1212; Fax: 450-662-0444; Email: [tservicesCA@mapei.com](mailto:tservicesCA@mapei.com); Web: [www.mapei.ca](http://www.mapei.ca).
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

**\*\* NOTE TO SPECIFIER \*\*** Delete paragraph above or below; coordinate with Division 1 requirements.

- D. Substitutions: Not permitted.

### 2.2 MORTAR MATERIALS

**\*\* NOTE TO SPECIFIER \*\*** Mortar materials include those for thick and medium setting beds and for "mortar bond coats" specified in TCA installation methods. Delete all of the following materials that are not required on the project. Special applications are listed first, followed by materials that can be used in many applications for most materials. Edit the "Applications" statements to accurately reflect the purposes the materials are intended for; if more than one type of mortar, adhesive, or grout is required on the project, edit the "Applications" statements so that the Contractor can tell which types are to be used in which locations.

Consult the manufacturer's catalog literature for more advice on selection of products, especially for difficult substrates such as gypsum floor leveling compounds, existing flooring, plywood, metal, and other dimensionally unstable substrates.

- A. Setting Mortar for White, Light-Colored, and Translucent Marble: White, fast-setting, polymer-modified mortar complying with ANSI A118.4 and ISO 13007. MAPEI "Ultracontact RS" ( floors only) ISO 13007; C2FS1P1 or MAPEI "Granirapid"; ISO 13007 C2FS2P2 or MAPEI Ultraflex RS, ISO 13007; C2FC1P1.

**\*\* NOTE TO SPECIFIER \*\*** MAPEI has strict requirements for green marble, green granite, agglomerates of green marble or granite, and Rosso Levanto and Negro Marquina marbles. Use the first set of paragraphs below for exterior applications; use the second set of paragraphs below for interior applications. Edit the headings to indicate the applicable types of stone.

- B. Adhesive for Green, Black, and Moisture Sensitive Marble and Granite and their Agglomerates: White, flexible, trowelable, two-component adhesive; MAPEI "Planicrete W"; ISO 13007; R2.
  - 1. Applications: Exterior floor and wall installations; except full building envelope.
  - 2. Applications: \_\_\_\_\_.
- C. Setting Mortar for Green, Black, and Moisture Sensitive Marble and Granite and their Agglomerates: 100 percent solids, water cleanable epoxy mortar complying with ANSI A118.3 and ISO 13007; MAPEI "Kerapoxy 410" ISO 13007; RG.
  - 1. Applications: Interior floor and wall installations.
  - 2. Applications: \_\_\_\_\_.

**\*\* NOTE TO SPECIFIER \*\*** Ultra/Contact and Ultra/Contact RS are designed for installation of large module tile and stone without the need to back butter. It is suitable for interior and exterior floor applications of vitreous and semi-vitreous tile and stone, and for interior setting of vitreous, semi-vitreous, and non-vitreous ceramic tiles, quarry tiles, pavers, porcelain, slate, marble, and granite. Do not use for exterior porcelain tile, for installations subject to prolonged water immersion, or over dimensionally unstable substrates maximum deflection of L/360.

- D. Setting Mortar for Large Module Tile and Stone: Medium-bed polymer-modified single-component mortar complying with ANSI A118.4 and ISO 13007. MAPEI "Ultracontact", ISO 13007; C2ES1P1 or MAPEI "Ultracontact RS"; ISO 13007 C2FS1P1 ( floors only), or MAPEI "Granirapid", ISO C2FS2P2 (for walls) or MAPEI, "Ultralite", ISO: 13007; C2TES1P1 or MAPEI, "Ultraflex LFT", ISO 13007; C2TES1P1 or MAPEI Ultraflex 3, ISO 13007; C2ES1P1



1. Applications: Interior and exterior floor installations; interior wall installations.
2. Applications: \_\_\_\_\_.

E. Setting Mortar for All Other Types of Stone and Vitreous Tile: Flexible polymer-modified Portland cement mortar, complying with ANSI A118.4 and ISO 13007 consisting of MAPEI "Keralastic System" consisting of factory-prepared dry-set mortar with MAPEI latex additive; ISO 13007 C2ES2P2.

1. Applications: Interior and exterior wall and floor installations.
2. Applications: \_\_\_\_\_.

F. Setting Mortar for All Other Types of Stone and Vitreous Tile: Latex-modified fast-setting hydraulic cement mortar; MAPEI 'Granirapid' two-component system, of hydraulic mortar and flexible liquid polymer additive complying with ANSI A118.4 and ISO 13007 C2FS2P2.

1. Applications: Interior and exterior wall and floor installations.
2. Applications: \_\_\_\_\_.

**\*\* NOTE TO SPECIFIER \*\*** Grani/Rapid is ready for light traffic after about 3 hours and completely cured in 24 hours. It is resistant to impact, vibration, temperature changes, aging and mild cleaning chemicals. Use it for any installation that requires rapid setting, such as large heavy units or moisture sensitive stones.

G. Fast-Setting Thin-Set and Medium-Bed Mortar: Latex modified hydraulic cement mortar; MAPEI "Granirapid System" two-component system, of hydraulic mortar and flexible liquid polymer additive complying with ANSI A118.4 and ISO 13007 C2FS2P2 or MAPEI, "Ultracontact RS" ISO 13007; C2FS1P1.

1. Applications: Exterior and interior wall and floor installations.
2. Applications: \_\_\_\_\_.

**\*\* NOTE TO SPECIFIER \*\*** Ultra/Flex RS is ready for grouting in 2-1/2 hours and for light foot traffic in 6 hours.

H. Fast-Setting Setting Mortar: Single-component, polymer-modified floor and wall mortar, complying with ANSI A118.4 and ISO 13007 C2FS1P1; MAPEI "Ultraflex RS".

1. Applications: Exterior and interior wall and floor installations.
2. Applications: \_\_\_\_\_.

**\*\* NOTE TO SPECIFIER \*\*** Epoxy setting mortar is used where exceptionally high strength, chemical and impact resistance are required. It is not suitable for exterior installations.

I. Epoxy Setting Mortar: 100 percent solids, chemical resistant water cleanable epoxy mortar complying with ANSI A118.3 and ISO RG; MAPEI "Kerapoxy".

1. Applications: Interior floor and wall tile.
2. Applications: \_\_\_\_\_.

J. Dry-Set Setting Mortar for Low Absorption Floor Tile: Dry-set mortar specifically designed for ceramic floor, quarry, and paver tile, complying with ANSI A118.1 and ISO 13007 C1; MAPEI "Keraflor".

1. For Exterior Applications: Use MAPEI "Keraply" latex additive undiluted instead of water.
2. For Exterior Applications: Use MAPEI "Planicrete AC" latex additive undiluted instead of water.
3. Applications: Floor tile having relative water absorption factor of less than 6 percent.
4. Applications: \_\_\_\_\_.

**\*\* NOTE TO SPECIFIER \*\*** Latex-modified Portland cement mortar made with PLANICRETE AC makes cement/sand coats, thick mortars, and leveling coats more freeze/thaw and impact resistant, more flexible and less water absorbent. It drastically reduces the relative water absorption of mortar to approximately 5 percent, making the mortar more resistant to urine, mild diluted acids, and alkalis. DO NOT use as a strong chemical resistant mortar. Setting beds may be from 3/16 inch (5 mm) to 2 inches (50 mm) thick.

K. Latex-Portland Cement Mortar: Latex-modified Portland cement mortar, consisting of ASTM C 144 dry masonry sand or 30-60 mesh silica sand, ASTM C 150 Type 1 Portland cement, and MAPEI "Planicrete AC" multipurpose latex additive.

1. Applications: Thick setting beds; mortar bond coats for interior and exterior floors and walls.
2. Applications: \_\_\_\_\_.

**\*\* NOTE TO SPECIFIER \*\*** Sand-cement mortars with latex additive are highly water and frost resistant. They can be used on interior and exterior over structurally sound substrates to set most types of tile. These setting mortars are not suitable for thick beds or leveling beds or as patching or repair compound. Select one of the following two sets of paragraphs.

L. Latex-Modified Sand-Cement Setting Mortar: Factory blended sand/cement mix with latex additive, complying with ANSI A118.4 and ISO 13007 C2S1P1; "Keraset Powder" with "Keracrete" additive.

1. Applications: Interior and exterior wall and floor tile.
2. Applications: \_\_\_\_\_.

**\*\* NOTE TO SPECIFIER \*\*** Dry-set mortar with latex additive has increased bond strength, impact strength and freeze/thaw resistance. Do not use where high chemical resistance is required. Delete all but one of the additive types.

**\*\* NOTE TO SPECIFIER \*\*** Kerabond is a premium dry-set mortar for floors and walls, that has outstanding bond strength excellent sag resistance and adjustability, and long open time. It is suitable for use over properly prepared concrete, masonry, cement mortars and leveling coats, cementitious backer units, gypsum wallboard, and plaster. Do not use it without latex additive for vitreous tiles, impervious or glass-like tiles, gauged slab, polished-back marble, granite, porcelain tiles, freeze/thaw environments, or over plywood or other non-cementitious substrates.

M. Dry-Set Setting Mortar: Premium floor and wall dry-set mortar, complying with ANSI A118.1 and ISO 13007 C1; MAPEI "Kerabond".

1. Applications: Interior and exterior floors and walls.
2. Applications: \_\_\_\_\_.

N. Dry-Set Setting Mortar: Floor and wall dry-set mortar, complying with ANSI A118.1 and ISO 13007 C1; MAPEI "Keraset".

1. For Exterior Use: Add MAPEI "Keraply" latex additive.
2. Applications: Interior and exterior floors and walls.
3. Applications: \_\_\_\_\_.

O. Thin-Set Mortar: Single-component, polymer-modified Portland cement mortar, complying with ANSI A118.4 and ISO 13007 C2EP1; MAPEI "Ultraflex 1".

1. Applications: \_\_\_\_\_.

**\*\* NOTE TO SPECIFIER \*\*** Ultra/Flex II thin-set mortar is suitable for interior floor and wall and exterior floor installations of vitreous and semi-vitreous tiles, and for interior floor and wall installations of non-vitreous tiles, quarry tile, pavers, slate, marble, and granite; also suitable for interior and exterior applications, for ceramic, porcelain, clay, glass, and natural stone tiles over most traditional well prepared non-deflecting substrates

(maximum deflection of L/360). May be used for porcelain up to 12 inches (300 mm) square in exterior horizontal applications. Do not use in installations subject to prolonged water immersion, or for green/black marble/granite.

- P. Thin-Set Mortar: Single-component, polymer-modified Portland cement mortar, complying with ANSI A118.4 and ISO 13007 C2ES1P1; MAPEI "Ultraflex 2".
1. Applications: Interior and exterior floors and walls.
  2. Applications: \_\_\_\_\_.
- Q. Thin-Set Mortar: Single-component, polymer-modified Portland cement mortar, complying with ANSI A118.4 and ISO 13007 C2ES1P2; MAPEI "Ultraflex 3".
1. Applications: Interior and exterior floors and walls.
  2. Applications: \_\_\_\_\_.

### 2.3 ADHESIVES AND PRIMERS

**\*\* NOTE TO SPECIFIER \*\*** A 'bond coat' is different from a 'mortar bond coat' as specified in TCA installation methods. This bond coat acts as a bonding agent to existing concrete, thereby increasing the adhesion of the setting or leveling mortar.

- A. Bond Coat: Latex cement slurry consisting of equal parts by weight of pure Portland cement and MAPEI 'Planicrete AC' latex additive.
1. Applications: On structural concrete slab before installation of mortar bed.
  2. Applications: Where called for by TCA installation methods specified.
  3. Applications: \_\_\_\_\_.

**\*\* NOTE TO SPECIFIER \*\*** The following primer helps to strengthen plaster, gypsum wallboard and concrete surfaces prior to setting ceramic wall tiles.

- B. Primer: MAPEI 'Planicrete AC' multipurpose latex.

**\*\* NOTE TO SPECIFIER \*\*** Wall tile adhesive can be used for interior wall and ceiling applications only, in dry or limited water exposure environments. It can be used for setting all types of glazed and unglazed tiles, over properly prepared gypsum wallboard, fully cured concrete, and cementitious backer board. Do not use for floor installations, pools, tanks, etc., or over dimensionally unstable substrates. Do not use for marble or marble agglomerates of the Verde green, Rosso Levanto or Negro Marquina types.

- C. Wall Tile Adhesive: Non-flammable organic adhesive, complying with ANSI A136.1 and ISO 13007 D2TE; MAPEI, "Type 1" adhesive or MAPEI, "Ultramastic Eco", or Ker 909, ISO 13007; D1TE.

**\*\* NOTE TO SPECIFIER \*\*** Floor and wall adhesive is suitable for interior use only, with non-vitreous, semi-vitreous, vitreous, and impervious mosaic tiles. Floor use should be for light duty residential applications only. It may be used for shower, tub, and bath surrounds where service requirements do not exceed those specified in ANSI A136.1. Do not use for pools, tanks, etc., or over dimensionally unstable substrates. Do not use for marble or marble agglomerates of the Verde green, Rosso Levanto or Negro Marquina types.

- D. Floor and Wall Tile Adhesive: Non-flammable organic adhesive, complying with ANSI A136.1 and ISO 13007 D2TE; MAPEI "Type 1" adhesive or MAPEI, "Ultramastic Eco", or Ker 909, ISO 13007; D1TE.
1. Applications: Interior floor and wall tile; except areas submerged or subject to prolonged wetting.
  2. Applications: \_\_\_\_\_.
- E. High-Bond Adhesive: White, flexible, trowelable, two-component adhesive, complying with ISO 13007 R2; ; MAPEI "Planicrete W".
1. Applications: Interior and exterior floor and wall tile.
  2. Applications: Ceramic tile over steel decks, over plywood, in areas of vibration, on prefabricated bath units.
  3. Applications: \_\_\_\_\_.

### 2.4 GROUT MATERIALS

**\*\* NOTE TO SPECIFIER \*\*** Delete all of the following materials that are not required on the project. Special applications are listed first, followed by materials that can be used in many applications for most materials. Edit the "Applications" statements to accurately reflect the purposes the materials are intended for; if more than one type of grout is required on the project, edit the "Applications" statements so that the Contractor can tell which types are to be used in which locations.

**\*\* NOTE TO SPECIFIER \*\*** Epoxy grout is used where exceptionally high strength, chemical resistance, and water resistance are required. Kerapoxy can be used for interior and exterior floor and wall installations, for ceramic tile, quarry tile, acid-resistant floor brick, paver tile, and slate. Do not use for white or translucent marble, in areas subject to heat over 212 deg F (100 deg C), or over dimensionally unstable surfaces. Do not use as a mortar.

- A. Epoxy Grout: 100 percent solids, water cleanable, complying with ANSI A118.3 and ISO 13007 RG; MAPEI "Kerapoxy".
1. Color: \_\_\_\_\_.
  2. Color: As selected by Architect.
  3. Applications: Interior floors at \_\_\_\_\_ and exterior pavers at \_\_\_\_\_.
  4. Applications: All floor tile.
  5. Applications: \_\_\_\_\_.
- B. Epoxy Grout: (Industrial Grade) 100 percent solids, water cleanable, improved resistance to chemical and heat exposure and complying with ANSI A118.3 and ISO 13007 RG; MAPEI "Kerapoxy IEG".
1. Color: \_\_\_\_\_.
  2. Color: As selected by Architect.
  3. Applications: Interior floors at \_\_\_\_\_ and exterior pavers at \_\_\_\_\_.
  4. Applications: All floor tile.
  5. Applications: \_\_\_\_\_.

**\*\* NOTE TO SPECIFIER \*\*** The following grout is designed for terracotta, Mexican, Brazilian, and Spanish tiles. Use the latex additive for increased strength, density, flexibility, freeze/thaw resistance, and decreased water absorption. Do not use for joints less than 3/8 inch (9 mm) wide, where chemical or acid resistance is required, or to grout non-vitreous glazed wall tile or polished marble.

**\*\* NOTE TO SPECIFIER \*\*** Ultra/Color can be used for grouting all types of ceramic tile, ceramic mosaics, quarry tile, brick pavers, slate, porcelain and most dimensional stones, with joints between 1/8 inch (2 mm) and 1 inch (25 mm), on the interior and exterior. It is a rapid curing high early strength, low shrinkage, polymer-modified proprietary mixture of cementitious compounds, select quartz aggregates and premium color-fast pigments. Ultra/Color is mixed by adding water only and achieves ANSI A118.6 28-day strength in 72 hours under manufacturer's prescribed project conditions. Do not use for conditions requiring high chemical or acid resistance. Do not use to grout non-vitreous glazed wall tile or polished stone.

- C. Epoxy Grout: 100 percent solids, water cleanable with improved cleanability, non sagging complying with ANSI A118.3 and ISO 13007;

RG: MAPEI Opticolor.

1. Color: \_\_\_\_\_.
2. Color: As selected by Architect.
3. Applications: Interior floors at \_\_\_\_\_ and exterior pavers at \_\_\_\_\_.
4. Applications: All floor tile.
5. Applications: \_\_\_\_\_.

D. Grout: Fast-setting sanded polymer-modified grout, ANSI A118.6, ANSI A118.7 and ISO 13007 CG2WAF; MAPEI "Ultracolor Plus"

1. Compressive Strength: When tested in accordance with ASTM C 109 at 110 percent flow:
2. Color: \_\_\_\_\_.
3. Color: As selected by Architect.
4. Applications: All interior and exterior tile; joints between 1/8 inch and 1 inch (3 mm and 25 mm) wide.
5. Applications: Use for all tile for which a different grout is not specified.
6. Applications: Use where efflorescence-free joints are desired.
7. Applications: \_\_\_\_\_.

**\*\* NOTE TO SPECIFIER \*\*** MAPEI KER 800 is specifically designed for grouting non-vitreous glazed ceramic wall tiles, but can be used for grouting other types of interior wall tiles, including glazed ceramic, marble, and narrow joints between 1/16 inch (1.5 mm) to 1/8 inch (3 mm) wide. Do not use for floor joints wider than 1/8 inch (3 mm). Do not use for exterior tile or stone, vitreous or semi-vitreous tiles, slate, natural stone, or where chemical and stain resistance is required. It is available in a broad range of colors and requires only water for mixing.

E. Grout: Unsanded polymer-modified Portland cement ceramic tile grout, complying with ANSI A118.6 and ISO 13007 CG2WA; MAPEI "Keracolor U".

1. Color: \_\_\_\_\_.
2. Color: As selected by Architect.
3. Applications: Interior wall tiles except vitreous and semi-vitreous, slate, and natural stone.
4. Applications: All interior wall and floor tile; joints less than 1/8 inch (3 mm) wide.
5. Applications: Natural stone; marble and granite tile.

F. Grout: Sanded polymer-modified Portland cement tile grout; complying with ANSI A118.6 and ISO 13007 CG2WA; MAPEI "Keracolor S".

1. Color: \_\_\_\_\_.
2. Color: As selected by Architect.
3. Applications: Interior wall and floor tile; joints between 1/8 inch and 5/8 inch (3 mm and 19 mm) wide.
4. Applications: \_\_\_\_\_.

## 2.5 ACCESSORIES

**\*\* NOTE TO SPECIFIER \*\*** Delete types not required.

- A. Latex Based Waterproofing and Crack Isolation Membrane; fast setting, flexible, thin, load-bearing, waterproofing membrane system consisting of a premixed, quick-drying liquid latex, for installation under ceramic tile or stone complying with ANSI A118.10 and ANSI A118.12; and having IAMPO certification as a shower pan liner MAPEI, "Aqua-Defense".
- B. Cement Based Waterproofing: trowel-applied, two-component, flexible, fiber-reinforced waterproofing and crack-isolation membrane that has IAMPO approved as a shower-pan liner complying with ANSI A118.10 and having IAMPO certification as a shower pan liner; MAPEI, "Mapelastic 315".
- C. Latex Based Waterproofing; flexible, thin, load-bearing, waterproofing membrane system consisting of a premixed, quick-drying liquid latex and a reinforcing fabric, for installation under ceramic tile or stone complying with ANSI A118.10 and having IAMPO certification as a shower pan liner; MAPEI, "Mapelastic 400" or MAPEI, "Mapelastic HPG".
- D. Crack Isolation and Sound Control; flexible, thin, load-bearing, fabric reinforced, 'peel-and-stick' crack-isolation and sound-reduction membrane that requires primer complying with ANSI A118.12 ; MAPEI, "Mapeguard 2" or MAPEI, "Mapesonic SM".

## 2.6 MIXES

- A. Proportion and mix materials in accordance with manufacturer's most current written instructions and applicable ANSI standards.

## PART 3 EXECUTION

### 3.1 EXAMINATION

**\*\* NOTE TO SPECIFIER \*\*** MAPEI has extensive surface preparation recommendations. Consult their Architectural Catalog for details.

- A. Examine surfaces to receive tilework and conditions under which tile will be installed.
- B. Do not proceed with tilework until surfaces and conditions comply with requirements indicated in reference tile installation standard and manufacturer's printed instructions.

### 3.2 INSTALLATION

- A. Install tile in accordance with manufacturer's printed instructions and the applicable requirements of ANSI A108 Series for the materials being used.

**\*\* NOTE TO SPECIFIER \*\*** For ease of specifying installation methods refer to the Tile Council of America (TCA) "Handbook for Ceramic Tile Installation" for time-proven methods. Include the TCA method numbers either on the drawing details or list them in the specification, with a description of where each is to be used. Delete the following paragraph if TCA methods are not to be indicated on the drawings.

- B. Install tile using TCA methods specified on the drawings.

**\*\* NOTE TO SPECIFIER \*\*** The following paragraphs are examples of how to specify different TCA methods for different applications. Delete if TCA methods are shown on the drawings.

- C. Floor Tile at \_\_\_\_: Install in accordance with TCA method \_\_\_\_.
- D. Wall Tile at \_\_\_\_: Install in accordance with TCA method \_\_\_\_.
- E. Tile on Soffits at \_\_\_\_: Install in accordance with TCA method C311.
- F. Tile Countertops: Install in accordance with TCA method \_\_\_\_.
- G. Tile in Refrigerated Rooms: Install in accordance with TCA method SR612.
- H. Tile in Steam Rooms: Install in accordance with TCA method SR613.
- I. Tile on Stairs: Install in accordance with TCA method S151.
- J. Install expansion and control joints in accordance with TCA method EJ171.

### 3.3 GROUTING

- A. Grout joints in accordance with manufacturer's instructions and ANSI A108.10.
- B. Clean sanding water, dust, and foreign substances from joints to be grouted.
- C. Clean and dry tile surfaces.
- D. After grouting, remove all grout residue promptly.

### 3.4 PROTECTION

**\*\* NOTE TO SPECIFIER \*\*** The following are general recommendations for protection during construction. Specific applications and products may allow tiled areas to be occupied sooner.

- A. Floors: Protect from all traffic for at least 72 hours after installation.
  - 1. Do not step on floor for at least 24 hours; if traffic is unavoidable after that, use plywood stepping boards.
  - 2. Protect from heavy traffic for at least 7 days after installation.
  - 3. When fast-setting materials are used to allow faster occupancy, comply with the manufacturer's recommendations.
- B. Walls: Protect from impact, vibration and heavy hammering on adjacent and opposite walls for at least 14 days after installation, unless manufacturer's instructions allow a shorter period.
- C. Protect from food products and chemicals which can cause staining for at least 14 days.

**\*\* NOTE TO SPECIFIER \*\*** When dealing with cement-based products, it should be noted that temperature and humidity during and after installation of tile affect final curing time. That is, low temperatures -- 60 deg F (15 deg C) and under -- and high humidity -- 70 percent and above -- will delay final cure time.

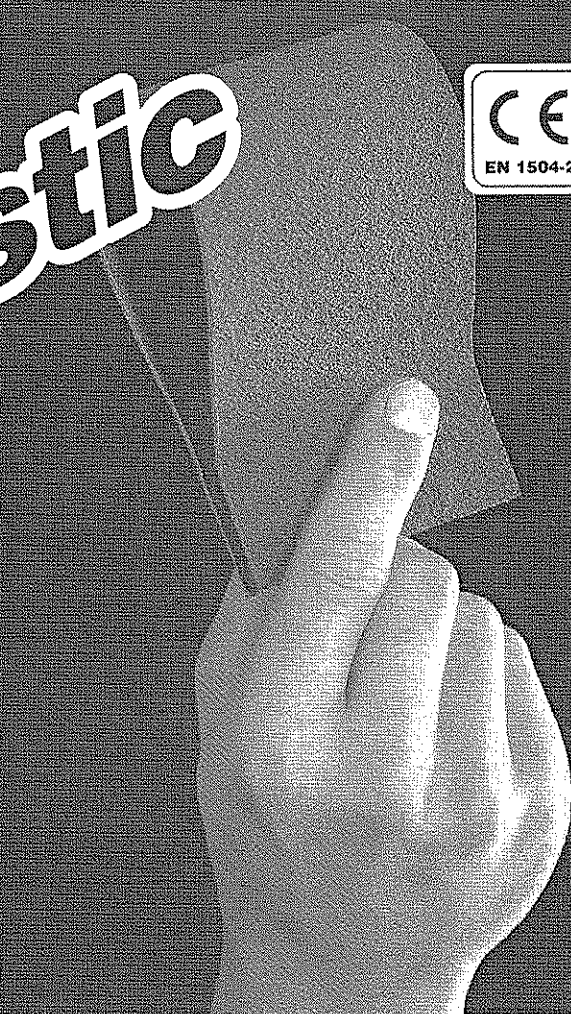
- D. Protect from freezing and total water immersion for at least 21 days after installation.

END OF SECTION



# Mapelastic

**Two-component, flexible cementitious mortar for the protection and waterproofing of concrete surfaces, balconies, terraces, bathrooms, showers and swimming pools**



## WHERE TO USE

Waterproofing and protection of concrete structures, renders and cementitious screeds.

### Some application examples

- Waterproofing of concrete basins used for containing water.
- Waterproofing bathrooms, showers, balconies, terraces, swimming pools, etc. before laying ceramic tile finishes.
- Waterproofing of plasterboard, render or cementitious surfaces, lightweight cement blocks and marine-grade plywood.
- Flexible smoothing layer for light-sectioned concrete structures, including those subjected to minor deformation when under load (e.g. pre-cast panels).
- Protection of renders or concrete with cracks caused by shrinkage, against the infiltration of water and aggressive atmospheric elements.
- Protection, against the penetration of carbon dioxide, of concrete pillars and joists and road and railway viaducts repaired with products from the **Mapegrout** range, and structures with an insufficient layer of concrete covering on the reinforcement rods.
- Protection of concrete surfaces which may come into contact with seawater, de-icing salts, such as sodium or calcium chloride, and sulphates.

## TECHNICAL CHARACTERISTICS

**Mapelastic** is a two-component mortar based on cementitious binders, fine-grained selected aggregates, special additives and synthetic polymers dispersed in water, blended according to a formula developed in MAPEI's own research laboratories.

When the two components are mixed together, a

free-flowing mix is obtained which may be easily applied, even on vertical surfaces, at a thickness of up to 2 mm in one single coat.

Thanks to the high content and quality of the synthetic resins, the cured layer of **Mapelastic** remains constantly flexible under all environmental conditions and, furthermore, is completely waterproof up to a pressure of 1.5 bar and resistant to the chemical attack of de-icing salts, sulphates, chlorides and carbon dioxide.

**Mapelastic** has excellent bonding properties to all concrete, masonry, ceramic and marble surfaces, as long as they are sound and sufficiently clean.

This property, together with its resistance to the deteriorating effect of UV rays, a characteristic of this product, ensures that structures protected and waterproofed with **Mapelastic** have a long service life, even if they are located in areas with particularly rigid climatic conditions, in coastal areas with a saline-rich atmosphere or in industrial areas where the air is particularly polluted.

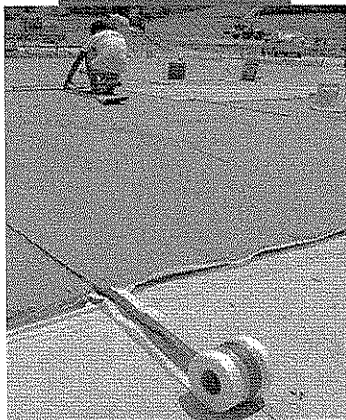
**Mapelastic** meets the requirements defined by EN 1504-9 (*"Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity - General principles for the use of products and systems"*) and the minimum requirements claimed by EN 1504-2 coating (C) according to the PI, MC and IR principles (*"Protection systems for concrete surfaces"*).

## RECOMMENDATIONS

- Do not use **Mapelastic** for thick coatings (more than 2 mm per coat).
- Do not apply **Mapelastic** at temperatures below +8°C.
- Do not add cement, aggregates or water to **Mapelastic**.



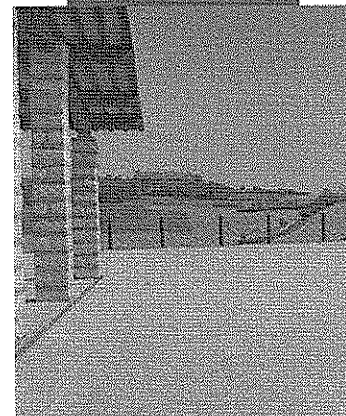
# Mapelastic



Waterproofing screeds with Mapelastic and Mapeband



Installing ceramic with Kerahond + Isolastic



Private terrace, Cereseto (Alessandria) - Italy

- Protect from rain and water spillage for the first 24 hours after application.
- When **Mapelastic** is used on large terraces or flat roofs that will not be covered with tiles, vapour vents must be appropriately positioned according to the level of humidity in the substrate (generally every 20-25 m<sup>2</sup>).  
This operation is indispensable when **Mapelastic** is laid on substrates which are particularly absorbent, such as screeds which have been lightened with polystyrene or foamed clay.

## APPLICATION PROCEDURE

### Preparation of the substrate A) Protection and waterproofing of concrete structures and pre-cast units

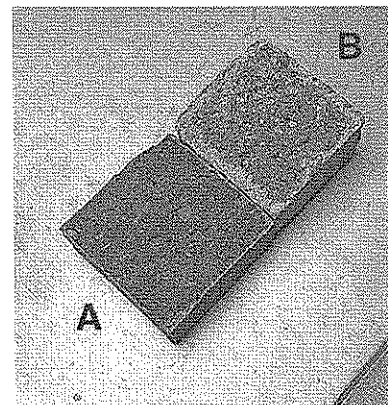


Fig. 2B - Penetration test of chloride ions (UNI 9944). Sample A covered with Mapelastic is not penetrated; sample B, left uncoated, shows an advanced penetration of many mm

(e.g. pillars and beams for road and railway viaducts, cooling towers, chimneys, underpasses, retaining walls, applications in coastal areas, basins, swimming pools, canals, faces of dams, columns, balcony fronts). The surface to be treated must be sound and perfectly clean. Remove all cement laitance, flaky parts and traces of powder, grease, oil and form release agents by sand-blasting, or wash down with high-pressure water jets. If the structure to be waterproofed and protected with **Mapelastic** is in poor condition, remove the damaged parts by hand or mechanical abrasion or by using a hydro-demolition system or a hydro-scarifier. The last two techniques, which use high-pressure water, are particularly recommended because the reinforcement rods are not damaged and the structures are not subject to vibration which could cause the onset of small cracks in adjacent concrete. Once the rust has been completely removed by sandblasting, carry out the repair with a pre-blended mortar from the **Mapegrout** range or with **Planitop 400** (see appropriate technical data sheets).

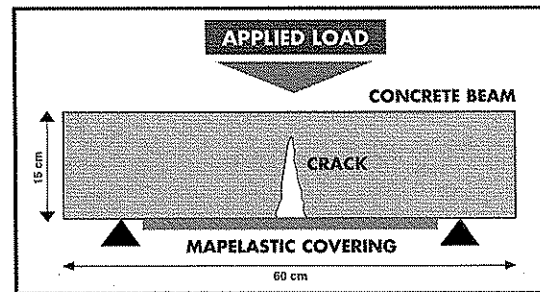


Fig. 1: Protection of a hairline crack with Mapelastic on the underside of a concrete beam subject to flexural stress

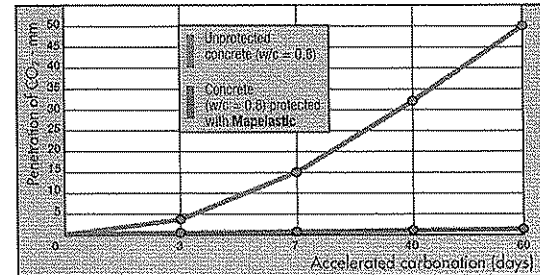


Fig. 2: Protection of Mapelastic against accelerated carbonation (30% of CO<sub>2</sub>) on porous concrete

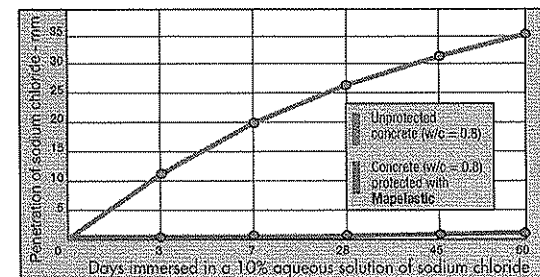


Fig. 3: Protection of Mapelastic against penetration of sodium chloride on porous concrete

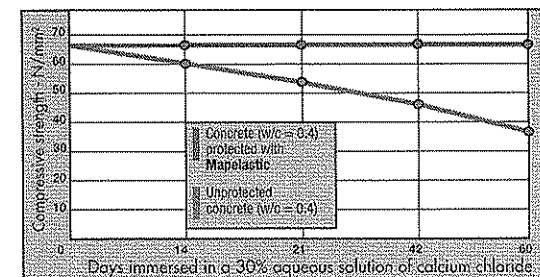


Fig. 4: Protection of mapelastic against the decrease in mechanical strength of concrete caused by calcium chloride based de-icing salts

Absorbent surfaces to be treated with **Mapelastic** must be dampened beforehand with water.

### B) Waterproofing terraces, balconies and swimming pools

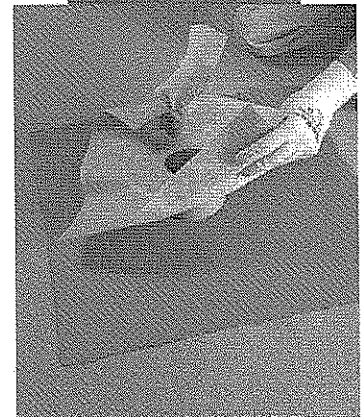
- **CEMENTITIOUS SCREEDS:**
  - setting cracks or cracks caused by plastic or hygrometric shrinkage must be filled beforehand with **Eporip**;
  - if thicknesses of up to 3 cm have to be levelled out (to create slopes, fill in dips, etc.) use **Planitop Fast 330**.

**Mapelastic:** two-component flexible cementitious membrane for waterproofing balconies, terraces, bathrooms and swimming-pools, and for protecting concrete in compliance with the requirements of EN 14891 and EN 1504-2 coating (C) principles PI, MC and IR.

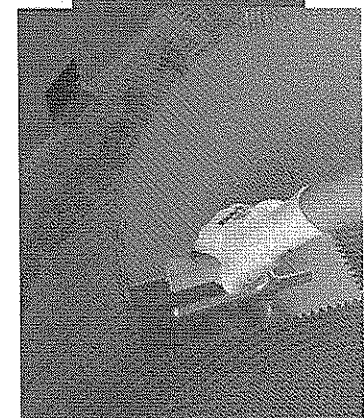
## TECHNICAL DATA (typical values)

PRODUCT IDENTITY		
	comp. A	comp. B
Consistency:	powder	liquid
Colour:	grey	white
Bulk density (g/cm <sup>3</sup> ):	1.4	-
Density (g/cm <sup>3</sup> ):	-	1.1
Dry solids content (%):	100	50
Storage:	12 months in its original packaging in a dry place	24 months
Hazard classification according to Directive 1999/45 CE:	irritant Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet	none
Customs class:	3824 50 90	
APPLICATION DATA OF PRODUCT (at +20°C - 50% R.H.)		
Colour of mix:	grey	
Mixing ratio:	component A : component B = 3 : 1	
Consistency of mix:	plastic, trowellable	
Density of mix (kg/m <sup>3</sup> ):	1,700	
Density after application by spray (kg/m <sup>3</sup> ):	2,200	
Application temperature range:	from +5°C to +35°C	
Pot life of mix:	1 hour	
FINAL PERFORMANCE (thickness ≥ 2.0 mm)		
	Acceptable limit according to EN 1504-2 coating (C) (PI, MC and IR principles)	Performance figures for Mapelastic
Bond strength to concrete according to EN 1542: - after 28 days at +20°C and 50% R.H. (N/mm <sup>2</sup> ):	For flexible systems with no traffic: ≥ 0.8 with traffic: ≥ 1.5	1.0
Thermal compatibility to freeze/thaw cycles with de-icing salts, measured as bond strength according to EN 1542 (N/mm <sup>2</sup> ):		0.8
Bond strength to concrete according to EN 1542: - after 7 days at +20°C and 50% R.H. + 21 days in water (N/mm <sup>2</sup> ):	not applicable	0.6
Flexibility according to DIN 53504 mod, expressed as elongation: - after 28 days at +20°C and 50% R.H. (%):	not applicable	30
Static crack-bridging at -20°C according to EN 1062-7 expressed as maximum width of the crack (mm):	from class A1 (0.1 mm) to class A5 (2.5 mm)	class A3 (+20°C) (> 0.5 mm)
Dynamic crack-bridging at -20°C according to EN 1062-7 of a film of Mapelastic reinforced with Mapetex Sol, expressed as resistance to cracking cycles:	from class B1 to class B4.2	class B3.1 (-20°C) No failure of the test place after 1,000 crack cycles with movement of crack from 0.10 to 0.30 mm
Permeability to water vapour according to EN ISO 7783-1: - equivalent thickness of air S <sub>e</sub> (m):	class I: S <sub>e</sub> < 5 m (permeable to vapour)	S <sub>e</sub> μ 3.6      1,800
Impermeability to water, expressed as capillary absorption according to EN 1062-3 (kg/m <sup>2</sup> ·h <sup>0.5</sup> ):	< 0.1	< 0.05
Permeability to carbon dioxide (CO <sub>2</sub> ) according to EN 1062-6 - diffusion in an equivalent thickness of air S <sub>eq</sub> (m):	> 50	> 50
Reaction to fire (Euroclass):	According to class declared by manufacturer	C, s1 - d0
	Acceptable limit according to EN 14891	Performance figures for Mapelastic
Impermeability to water under pressure according to EN 14891-A.7 (1.5 bar for 7 days of positive lift):	no penetration	no penetration
Crack-bridging ability at +20°C according to EN 14891-A.8.2 (mm):	> 0.75	0.9
Crack-bridging ability at -20°C according to EN 14891-A.8.3 (mm):	> 0.75	0.8
Initial bond strength according to EN 14891-A.6.2 (N/mm <sup>2</sup> ):	> 0.5	0.8
Bond strength after immersion in water according to EN 14891-A.6.3 (N/mm <sup>2</sup> ):	> 0.5	0.55
Bond strength after application of heat source according to EN 14891-A.6.5 (N/mm <sup>2</sup> ):	> 0.5	1.2
Bond strength after freeze-thaw cycles according to EN 14891-A.6.6 (N/mm <sup>2</sup> ):	> 0.5	0.6
Bond strength after immersion in basic water according to EN 14891-A.6.9 (N/mm <sup>2</sup> ):	> 0.5	0.6

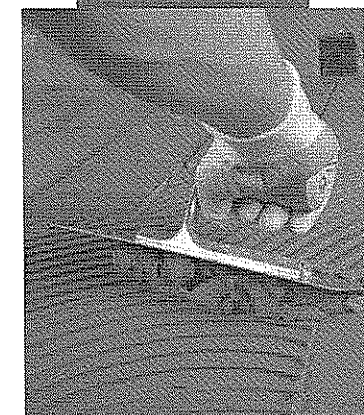
Bond values according to EN 14891 measured using Mapelastic and a C2F-type cementitious adhesive according to EN 12004



Application of Drain  
Vertical on Mapelastic



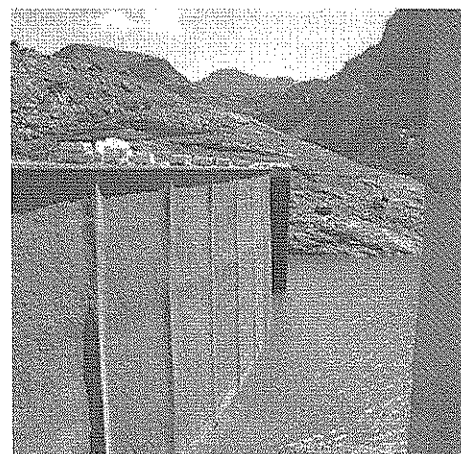
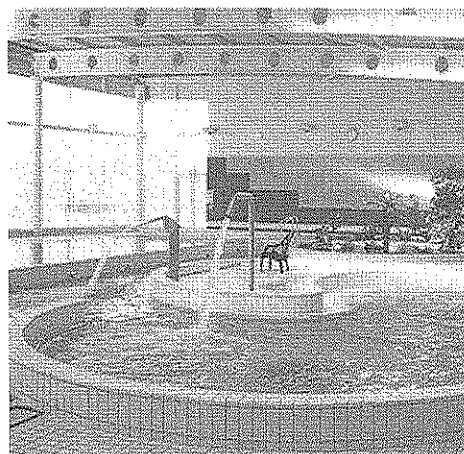
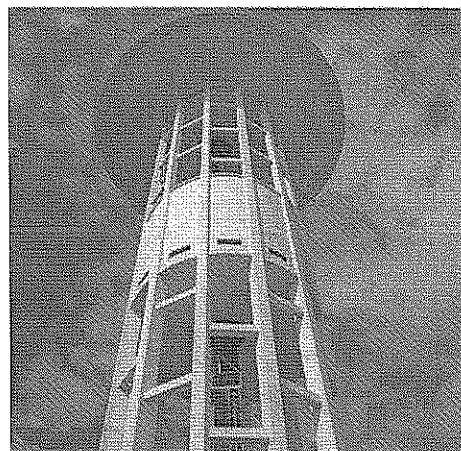
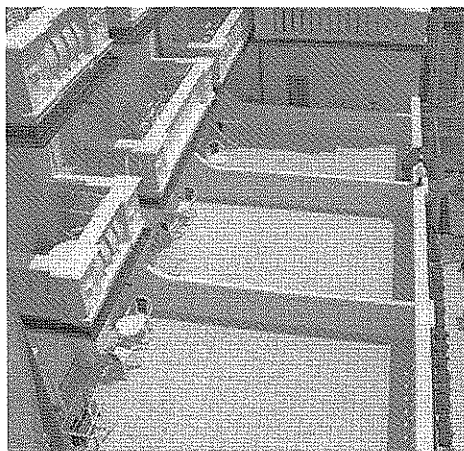
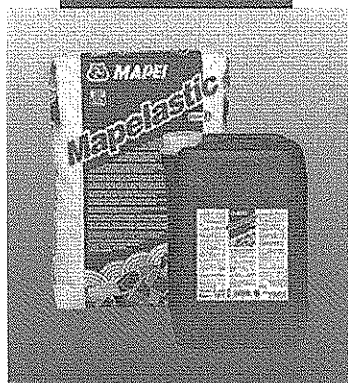
Laying Mapelastic  
on Mapenet 150



Laying Granirapid on a  
terrace waterproofed  
with Mapelastic



# Mapelastic



For further and complete information about a safety use of our product please refer to our latest version of the Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

## WARNING

*While the indications and guidelines contained in this data sheet correspond to the company's knowledge and wide experience, they must be considered, under all circumstances, merely as an indication and subject to confirmation only after long-term, practical applications. Therefore, anybody who undertakes to use this product, must*

*ensure beforehand that it is suitable for the intended application and, in all cases, the user is to be held responsible for any consequences deriving from its use.*

Please refer to the current version of the Technical Data Sheet, available from our web site [www.mapei.com](http://www.mapei.com)

**All relevant references  
for the product are available  
upon request and from  
[www.mapei.com](http://www.mapei.com)**

(GB) A.G. BETA

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331-7-2010

 **MAPEI®**  
BUILDING THE FUTURE



- **EXISTING FLOORS:**

- existing floors and coverings in ceramic, porcelain tiles, clinker or terracotta, etc. must be well bonded to the substrate and free of substances which could compromise the bonding, such as grease, oil, wax, paint, etc.

- **RENDERS:**

- cementitious renders must be sufficiently cured (7 days per cm of thickness in good weather conditions), well bonded to the substrate, resistant and free from all dust and paint;

- dampen absorbent surfaces to be treated beforehand with water.

### **Preparation of the mortar**

Pour component B (liquid) into a suitable, clean container, then slowly add component A (powder) while stirring with a mechanical mixer.

Carefully mix **Mapelastic** for a few minutes, making sure that no powder remains stuck to the sides or the bottom of the container.

Keep stirring until a perfectly homogenous mix is obtained.

Use a low-speed mechanical mixer for this operation to avoid too much air being dragged into the mix.

Do not prepare the mix by hand.

Preparation of **Mapelastic** may also be carried out with a mortar mixer, which is usually supplied with mortar sprayers. If this technique is used, make sure that the mix is homogenous and has no lumps before it is poured into the hopper of the pump.

### **Manual application of the mortar**

**Mapelastic** must be applied within 60 minutes of it being mixed.

Smooth off the prepared surface by applying a thin layer of **Mapelastic** with a smooth trowel. Apply a second coat on top of this first layer while it is still fresh, to achieve a final thickness not less than 2 mm.

When used for waterproofing terraces, balconies, basins and swimming pools, it is recommended to insert a layer of **Mapenet 150** in the first layer of fresh **Mapelastic**, to act as reinforcement (see **Mapenet 150** technical data sheet). The mesh must also be used in areas with either small cracks or in areas which are under particular stress.

After the mesh has been laid, finish off the surface with a flat trowel and apply a second layer of **Mapelastic** when the first one has set (after 4-5 hours).

To further improve both elongation at failure and crack-bridging of **Mapelastic**, we recommend inserting **Mapetex Sel** macro-holed non-woven polypropylene fabric (refer to the **Mapetex Sel** technical data sheet). The first layer of **Mapelastic** must be at least 1 mm thick. While it is still fresh, carefully lay the **Mapetex Sel** on the surface and press it in using a flat-bladed trowel to make sure that it is perfectly buttered. Then apply the second coat of **Mapelastic** to completely cover the fabric and smooth over the surface using a flat-bladed trowel.

In the waterproofing sector, more than in any other sector, it is essential that particular attention is paid to details, which alone are capable of making a difference. This is why **Mapeband TPE**, **Mapeband** and other special accessory articles are indispensable and a determining factor.

**Mapeband TPE** is used to seal structural joints and joints subject to high dynamic stress, **Mapeband** is used to waterproof check joints, fillet joints between horizontal and vertical elements and special kits from the **Drain** range are used to seal drain holes. It is absolutely imperative that special care is in these critical areas after evening out and cleaning the substrate and before applying the cementitious waterproofing mortar.

After applying **Mapelastic**, wait 5 days for curing before laying ceramic tiles. In favourable climatic conditions and with good temperatures this period may be reduced to 24 hours on damp substrates.

### **Laying ceramic tiles on Mapelastic**

- **BALCONIES AND SWIMMING POOLS:**

- lay the tiles with MAPEI cementitious adhesives and leave wide joints. In swimming pools, use **Granirapid** (class C2F, S1), **Elastorapid** (class C2FTE, S2) or **Keracrete + Keracrete Powder** (class C2T). If mosaics are laid, **Adesilex P10 + Isolastic** mixed with 50% water may also be used (class C2TE, S1).

- grout the joints between the tiles with a suitable cementitious grout (for example **Keracolor FF**, **Keracolor GG** mixed with **Fugolastic**, **Ultracolor Plus** - class CG2) or epoxy resin (for example **Kerapoxy** - class RG);

- seal expansion joints with a suitable flexible sealant from the MAPEI range (such as **Mapeflex PU21**, **Mapeflex PU20**, **Mapeflex PU50 SL**, **Mapeflex PU45**, **Mapeflex PU40** or **Mapesil AC**, according to requirements).

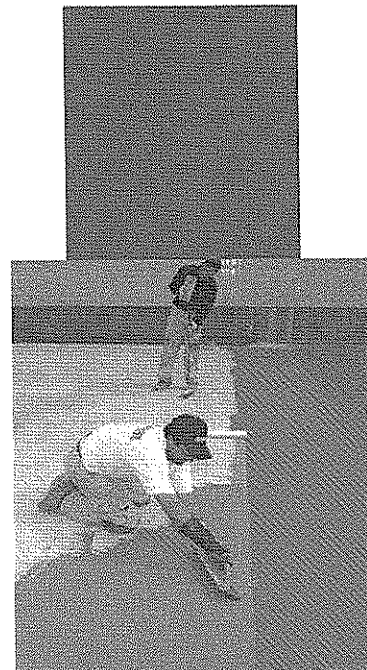
### **Application of the mortar by spraying**

After preparing the surface (see paragraph on "Preparation of the substrate"), apply **Mapelastic** with a spray gun with a lance fitting suitable for use with smoothing mortars, at a minimum thickness not less than 2 mm per layer.

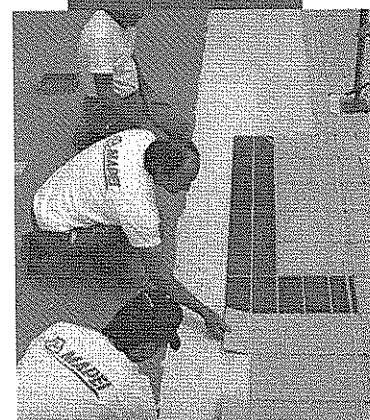
If a thicker layer is required, **Mapelastic** must be applied in several coats. Successive coats must only be applied when the previous one is dry (after 4-5 hours).

In areas with small cracks or which are highly stressed, insertion of **Mapenet 150** in the first layer of fresh **Mapelastic** is recommended.

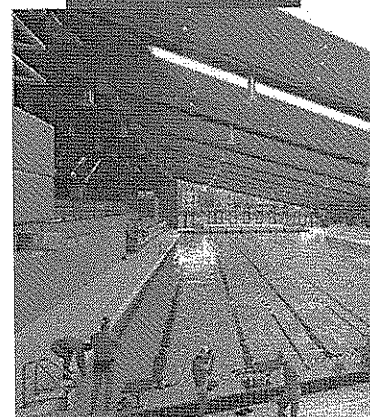
Immediately after laying the mesh, **Mapelastic** must be smoothed off with a flat trowel.



*Waterproofing a swimming pool with Mapelastic*



*Laying ceramic tiles on Mapelastic in a swimming pool*



*Swimming pool waterproofed with Mapelastic: Scarioni Leisure Centre - Milan - Italy*

If the mesh needs to be covered better, a further layer of **Mapelastic** may be applied with a spray gun.

To further improve both elongation at failure and crack-bridging of **Mapelastic**, we recommend inserting **Mapetex Sel** non-woven macro-holed polypropylene fabric (refer to the **Mapetex Sel** technical data sheet).

The first layer of **Mapelastic** must be at least 1 mm thick. While it is still fresh, carefully lay the **Mapetex Sel** on the surface, and press it in using a flat-bladed trowel to make sure that it is perfectly buttered. Then apply the second coat of **Mapelastic** to completely cover the fabric, and smooth over the surface using a flat-bladed trowel.

In the areas around expansion joints and joints between horizontal and vertical surfaces, either **Mapeband**, alkali-resistant rubber tape with felt, or **Mapeband TPE**, tape made from thermo-plastic polymers and synthetic elastomers, must be used. If **Mapelastic** is used for protecting stacks and joists on bridges, railway underpasses and façades on buildings etc., the product may be painted using products from the **Elastocolor** range, which are acrylic resin-based water dispersions and are available in a wide range of colours which may be obtained using the **ColorMap®** automatic colouring system.

If **Mapelastic** is used, on the other hand, for protecting surfaces in constant contact with water and the final coating is not in ceramic such as in swimming pools, or on horizontal concrete surfaces not for pedestrian use such as flat roofs, the product may be painted over with **Elastocolor Waterproof** flexible acrylic resin-based paint in water dispersion (refer to the technical data sheet for **Elastocolor Waterproof**).

**Elastocolor Waterproof** is available in a wide range of colours obtained using the **ColorMap®** automatic colouring system and must be applied at least 20 days after applying **Mapelastic**.

#### Precautions to be taken during and after application

- No special precautions need to be taken when the temperature is around +20°C.
- During hot weather, it is advisable to keep the product out of direct sunlight (powder and liquid).
- After application, and in particularly dry, hot or windy weather, it is recommended to protect the surface from rapid evaporation by covering it with sheets.

#### TECHNICAL PERFORMANCE DATA

The technical data table contains the identification and application data for the product. Figures 1, 2, 3 and 4 illustrate some of **Mapelastic**'s characteristics. Figure 1 shows the load diagram for evaluating the product's crack-bridging capacity. The sample to which **Mapelastic** was applied, on the underside of the beam, is subjected to increasing loads in the middle. The crack-bridging capacity of **Mapelastic** is determined by measuring the maximum width of the crack in the concrete at the moment **Mapelastic** fractures. The degree of protection offered by **Mapelastic** to the concrete substrate is not

limited to a simple "covering" of subsequent cracks provoked by heavy loads, shrinkage, temperature variations etc. **Mapelastic** itself is also very resistant to chemical attack, as illustrated by the results of the following tests, and offers good protection for the concrete against carbonation and, therefore, subsequent corrosion of the reinforcing rods.

Figure 2 is a graph which compares accelerated carbonation (in an atmosphere of air enriched with 30% of CO<sub>2</sub>), and shows how **Mapelastic** is completely impermeable to this aggressive substance (Fig. 5). The **Mapelastic** membrane also protects the concrete from the action of sodium chloride (for example seawater).

Figure 3 shows how **Mapelastic** completely blocks infiltration of salt into the concrete which is, in itself, very porous and may be easily penetrated. **Mapelastic** also provides an impenetrable barrier against calcium chloride (CaCl<sub>2</sub>) based de-icing salts, which have a destructive action on even the highest quality concrete.

Figure 4 shows the reduction in mechanical resistance (initially 65 N/mm<sup>2</sup>) of concrete permanently immersed in a solution of 30% CaCl<sub>2</sub>. In this case, too, **Mapelastic** offers efficient protection of the concrete, and prevents the salt from carrying out its aggressive and destructive action on the concrete.

#### Cleaning

Due to the high bonding strength of **Mapelastic**, even on metals, it is recommended to wash work tools with water before the mortar sets. Once it has set, cleaning may only be carried out by mechanical means.

#### CONSUMPTION

Manual application:  
approx. 1.7 kg/m<sup>2</sup> per mm of thickness.

Spray gun application:  
approx. 2.2 kg/m<sup>2</sup> per mm of thickness.

#### PACKAGING

Units of 32 kg:  
component A: 24 kg bags;  
component B: 8 kg drums.  
Upon request, component B may also be supplied in 1000 kg tanks.  
Units of 16 kg:  
2 6 kg bags and 1 4 kg drum.

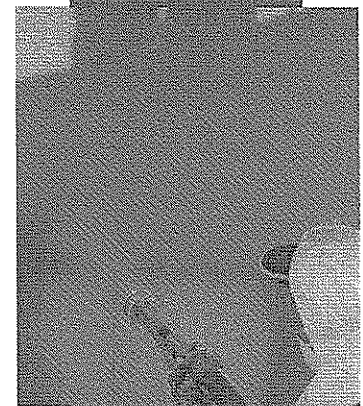
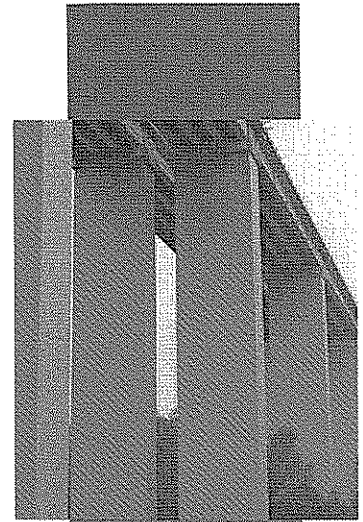
#### STORAGE

**Mapelastic** component A may be stored for up to 12 months in its original packaging. Manufactured in compliance with the regulations of the 2003/53/EC Directive.

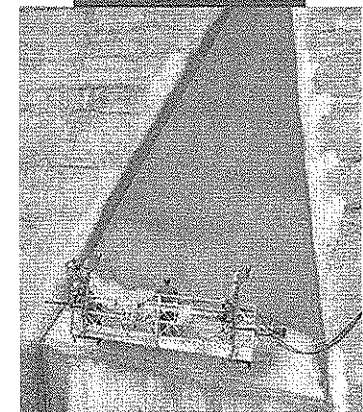
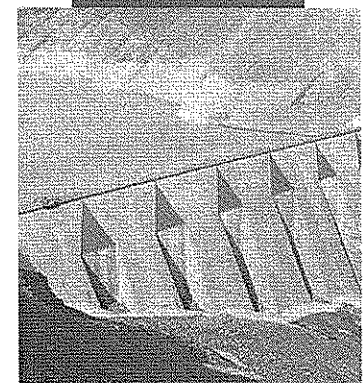
**Mapelastic** component B may be stored up to 24 months.  
Keep **Mapelastic** in a dry place and at a temperature of at least +5°C.

#### SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Mapelastic** component A contains cement which, in contact with perspiration or other body fluids, produces an irritating alkaline reaction and allergic reactions to those predisposed. Wear protective gloves and goggles.



Example of **Mapelastic** applied on a viaduct by spraying



Example of **Mapelastic** applied on a dam by spraying

## Walters, Shannon

---

**From:** Goetz, Sharon  
**Sent:** Thursday, December 09, 2010 11:23 AM  
**To:** Moulton, Pamela; Walters, Shannon  
**Cc:** Roche, Emily; Ensor, James (Bob); Willard, Larry  
**Subject:** More on Boards

Pam & Shannon,

I noticed that other Boards have their agendas and minutes on the County website. We need to start doing that. Let's start that Jan. 1. Also, when you have a chance, please look at our Board's pages on our website and make sure all members listed are current. If you need to update, email Emily with the updated names.

Please contact each Board Chairperson & let them know that we will begin posting their Board meeting agendas and minutes beginning with meetings held in 2011. (Maybe this will encourage the Gaming Board to actually meet? ☺)

### By-laws

You may want to mention that other County Boards have their bylaws or rules of procedures posted on the County website. I don't think any of our Boards have adopted bylaws in place, do they? Maybe Plumbing does and I just am not aware of it. Gaming has something in the notebook, but I don't think they are official. I know the Electrical Board was working on theirs; did they finish? Attached is the Zoning Board of Appeals' bylaws that are online. I've attached theirs as an example if the Boards would like to see an example. It's up to the Board to come up with their bylaws, though, not us.

### Filing Procedures

I have also attached an example of a Board's filing procedures, (Zoning BOA's) and these are extensive; ours wouldn't be nearly as extensive, but whatever procedures we use we need to post online. If the Board doesn't have filing procedures described in bylaws or in any document, please create a document and email it to Emily for posting. I would like to have the filing procedures online by Jan.1. Since we are the ones they file with, I think it's appropriate to go ahead and take care of that part instead of asking the Boards to do it.



Boards.BOA\_Bylaw sUpdate1003\_1....  
Boards.BOA.Filing.P rocedures.p...

Thanks,  
Sharon

Sharon Goetz  
Manager of Permitting Services  
Frederick County Department of  
Permits & Inspections  
30 North Market Street  
Frederick, MD 21701  
Please note new email address:  
[SGoetz@FrederickCountyMD.gov](mailto:SGoetz@FrederickCountyMD.gov)  
301-600-1082 Office  
301-600-2309 Fax



## FREDERICK COUNTY PLUMBING ADVISORY BOARD

30 North Market Street • Frederick, Maryland 21701

---

### *REQUEST FOR A PLUMBING ADVISORY BOARD HEARING*

Date \_\_\_\_\_

Building Permit # \_\_\_\_\_

#### Contact Information:

Name

\_\_\_\_\_

Association to Project

\_\_\_\_\_

Phone

\_\_\_\_\_

E-Mail

\_\_\_\_\_

Reason for Hearing: (Attach pertinent information for Board review to this request.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(A \$219.00 Administrative Fee for all requests made for Plumbing Advisory Board Consideration must be paid with this request. Please make check payable to "Frederick County".)

Revised 7/1/10



Made copies  
for members  
to review for  
next mtg.  
for  
By-Laws.

## **FREDERICK COUNTY BOARD OF APPEALS**

### **I. MEMBERSHIP, POWERS AND DUTIES**

The membership, powers and duties of the Board are as set forth in Article 66B of the Maryland Code and in the laws and ordinances of Frederick County.

### **II. COMPOSITION**

- A. **Number:** The Board consists of five (5) members as provided by law. In addition, there is one (1) alternate member who is empowered to sit on the Board in the absence of any Member of the Board.
- B. **Appointment:** Members are appointed by the Frederick County Board of County Commissioners as provided by law.
- C. **Term:** The term of each Member is three (3) years, or as appointed by the Frederick County Board of County Commissioners as provided by law.
- D. **Chair:** The Board shall elect a chair from one of its members to serve a term of one (1) year. The chair shall preside at meetings of the Board and may call special meetings of the Board, may compel the attendance of witnesses through subpoena, and may grant restraining orders to stay actions that are under appeal.
- E. **Vice-Chair:** The Board shall elect a vice-chair from one of its members to serve a term of one (1) year. The vice-chair shall preside over meetings in the absence of the chair and may call special meetings of the Board and may compel the attendance of witnesses through subpoena, and may grant restraining orders to stay actions that are under appeal when the chair is unable to do so under the circumstances.
- F. **Secretary:** The Board shall appoint or have appointed a member of the Frederick County staff to serve as Secretary. The person so appointed shall not be an officer of the County whose decisions may be appealed to the Board. The Secretary shall prepare written minutes of all meetings for approval by the Board.
- G. **Alternate:** The Alternate shall have all powers and duties of a regular Board member when sitting on a case.

### **III. FILING OF APPLICATIONS**

- A. An official application, inclusive of all required documents, for a special

exception, variance, renewal of zoning certificate, or administrative appeal may be filed at any time prior to 3:00 P. M.

- B. All applications for a special exception or variance shall include plot plans and/or sketches and all other information necessary for proper consideration of the application as outlined in Sec. 1-19-3.200 (a), as amended. Such drawings shall clearly depict the distance from appropriate property lines to any proposed structure and shall clearly show the relationship between any proposed variance and any appropriate property line. The location of any required parking spaces shall be clearly shown with respect to property lines and/or structures, as appropriate.

All cases involving commercial or industrial properties shall include all materials in a digital format if available to or reasonably obtainable by the party submitting non-electronically stored materials.

- C. Administrative appeals to the Board of Appeals must be filed within thirty (30) days after the date of the administrative decision from which an appeal is taken. Time shall be computed as per Section 1-1-2 of the Frederick County Code.
- D. If an application for a special exception is denied or withdrawn with prejudice, no new application for the denied use on the same property shall be refiled for one (1) year after the decision denying or withdrawing the previous application.
- E. Any application for special exception withdrawn without prejudice or dismissed prior to hearing without prejudice may be refiled pursuant to procedures set forth above.
- F. An application for special exception seeking a different use with regard to a subject property and which has been the subject of a previous application may be submitted pursuant to procedures set forth above.
- G. All applications for special exceptions and variances must be made by a person with a financial, contractual or proprietary interest in the subject property. The Board may require proof of such interest. If there is a conflict in those interests, the person with controlling legal interest shall determine if an application is to be filed.
- H. An appellant in an administrative appeal shall submit material and memoranda to staff and the agency or officer whose decision is being appealed not less than 21 days before the Board's next hearing. The agency or officer whose decision is being appealed shall submit reply material and memoranda to the staff and the appellant not less than 10

days before the Board's next hearing. Materials submitted, by either party, after said deadlines may result in a 30 day continuance.

**NOTE:** Specific details on the filing of applications are delineated in the Zoning Ordinance.

#### IV. **AGENDA**

The agenda of applications and appeals to be heard shall be maintained by the Secretary and shall be available for public inspection during normal business hours.

#### V. **HEARINGS AND MEETINGS**

##### **Time and Place of Hearings:**

- A. The Board holds regular hearings on the fourth Thursday of every month at 7:00P.M., or at such time as the Board may designate. Special meetings are held upon the call of the Chair or majority of the Board. Dates of the public hearings shall be on the signs on the properties, which are the subject of the special exception, variance, renewal of zoning certificate, or claim of administrative error before the Board. Notices shall be sent by mail to the applicant and adjoining property owners in the case of special exceptions and variances as required by law and these rules.
- B. **Quorum:** A minimum of three members of the Board shall be required to conduct hearings or any other business of the Board. The Chair shall have the right to make or second motions.
- C. **Continuance of Hearing:** Hearings may be continued from time to time and, if the time and place of the continued hearing be publicly announced at the time of the continuance, no further notice of such continued hearing shall be required; otherwise, notice thereof shall be given as in the case of the original hearing. The Board may grant a continuance at the public hearing for good cause shown.
- D. **Order of Business:** Meetings of the Board may be conducted in the following manner:
  - 1. Approval of the minutes of the previous meeting(s).
  - 2. Overview of the hearing procedures presented by the Chair.
  - 3. Hearing of scheduled cases.



4. Other matter(s) proposed by the Board.
5. Adjournment.

E. **Procedure:**

(A) The hearing of special exception, variance, and renewal of zoning certificate cases shall be conducted in the following manner:

1. All persons wishing to offer testimony on the case should sign up prior to the case being called, if determined by the Chair, and shall be sworn in. Only sworn testimony will be considered.
2. Staff report and agency comments shall be presented and made a part of the record.
3. Applicant, appellant, or agent shall present the request to the Board.
4. Testimony in support of the application or appeal.
5. Testimony in opposition to the application or appeal.
6. Additional relevant testimony either in support or opposition to the application or appeal.
7. Rebuttal testimony by the applicant, appellant or agent if opposition testimony is presented.
8. Letters or written statements relevant to the case shall be noted for and made a part of the record.
9. In the event the Board continues a case in order to give due consideration to the bulk or complexity of evidence already submitted or calls for any additional material, such materials must be submitted to Board staff not less than 15 days before the Board's next hearing. Materials submitted after that time may result in a 30 day continuance.

(B) The hearing of administrative appeals shall be conducted in the following manner:

1. All persons wishing to offer testimony on the case should sign up prior to the case being called, if determined by the Chair, and shall

be sworn in. Only sworn testimony will be considered.

2. Board of Appeals staff report and agency comments shall be presented and made a part of the record.
3. Agency, officer or legal counsel from whom appeal is filed shall present the agency's position to the Board.
4. Appellant or agent presents the case for appeal.
5. Testimony in support of the agency or officer position.
6. Testimony in support of the appeal.
7. Additional relevant testimony either in support or opposition to the appeal.
8. Rebuttal testimony by the appellant or agent to agency testimony.
9. Letters or written statements relevant to the case shall be noted for and made a part of the record.
10. In the event the Board continues a case in order to give due consideration to the bulk or complexity of evidence already submitted or calls for any additional material, such materials must be submitted to Board staff not less than 15 days before the Board's next hearing. Materials submitted after that time may result in a 30 day continuance.

In each case, the applicant, agency or appellant shall have a twenty (20) minute presentation period. Groups recognized by the Chair shall have ten (10) minutes and individuals shall have four (4) minutes. An applicant, appellant or agency representative shall have rebuttal time of five (5) minutes in cases of opposition testimony. The Chair may grant extensions of the time limits unless a board member raises an objection. Board members and the staff may question the presenter or witness at any time during the hearing; in addition, the Chair may direct a person to respond to a question of the Board.

Cross examination of witnesses in any adjudicative proceeding before the Board shall be permitted. The right to cross-examine witnesses shall be extended only to those persons who are parties to the proceedings before the Board or who have a cognizable interest in the outcome of the proceedings as determined by the Chair. A person or party wishing to cross examine a witness shall make the request prior to or immediately after the time that the witness has concluded his or her testimony, and the

failure to make such a timely request may be deemed a waiver of the right to cross examine as determined by the Chair. The scope of any cross examination shall be reasonable and may be limited, as determined by the Chair, so as to permit a full and true disclosure of the facts, having due regard to the circumstances of each particular case, the nature of the proceedings, and the character of the rights which may be affected by it

The rules of evidence applicable to administrative hearings as set forth by the Court of Appeals of Maryland shall generally apply. The Board shall conduct hearings in a manner best calculated to afford all parties an opportunity to present their positions and to serve the ends of justice and fairness. The Board may make such rulings as may be necessary to conduct the hearing in an efficient and orderly manner including, but not limited to, imposing time limitations and excluding irrelevant or repetitive evidence. Appellants and applicants are bound by any legal proffers or evidence offered and adopted by the Board as a condition or reason of the Findings and Decision.

- F. **Identification of Parties:** All persons appearing to testify or submit evidence shall identify themselves on the sign up sheet provided by staff if required by the Chair and again at the podium by name, address and any person or entity they represent. Designated spokesperson for groups shall identify themselves as such as well.
- G. **Reserved**
- H. **Determination by Vote at Hearing:** The majority of the votes cast are required to grant an application or appeal. Failure to obtain the majority of the votes cast shall have the effect of a denial. A tie vote shall constitute a denial of the requested relief. The Board may impose conditions on a grant of a special exception or a variance petition, as provided by law.
- I. **Decision:** The Board shall grant or deny each application or appeal in writing. Each grant or denial shall set forth a summary of facts found and reasons for the decision relevant to the pertinent criteria. The Secretary shall prepare written "Findings and Decisions" for each grant of a special exception, variance, renewal of zoning certificate, or administrative appeal. The decision does not become official and final until signed by all members of the Board who heard the case or their authorized designee, usually at the regularly scheduled meeting the month following the hearing(s). For applications in the floodplain areas, the Secretary shall maintain a record of all decisions, including justification for their issuance, and report such decisions issued in the County's biennial report to the Federal Emergency Management Agency.

- J. **Record:** An electronic transcript shall be kept by a recording device, and the record shall be preserved as a public record for a period of three years. The recording may be transcribed stenographically or copied electronically by any interested person at his/her own expense by arrangement with and under the supervision of the Secretary of the Board. If there are discrepancies between recordings, the Board's recording is the official recording. The only official written transcript is that approved by the Secretary.
- K. **Minutes:** Written minutes, showing the disposition of the cases and showing the vote of each member upon the question, shall be approved by the Board, shall be signed by the chair or acting Chair and shall be kept by the Secretary. The signed minutes shall be public record available for inspection. Following a Board of Appeals meeting the draft minutes will be produced within 10 business days of the past meeting and will be adopted, in final form, by the board at the next regularly scheduled meeting.

#### VI. **WITHDRAWAL OF APPLICATION**

An applicant may withdraw an application at any time.

#### VII. **RECONSIDERATION**

The Board may entertain a request for reconsideration of a decision.

- A. Parties with a financial, contractual, or proprietary interest, or who became a party of record at the initial hearing may request reconsideration. Such a request must be in writing, must be received within 14 business days after the oral decision of the Board and must set forth the reasons for the request (for example, newly discovered evidence or new case law). The party requesting reconsideration shall also give a written notice to any person who is party or who became a party in the matter at the public hearing. Verification of this notice being sent must be presented to the Board at the time of the written request. No action on any request will be taken except upon a motion by a Board member.
- B. A Board member (whether or not on the prevailing side of a question or at the initial hearing) may make a motion for reconsideration at any Board meeting prior to the final signing of the decision.

If the Board agrees to reconsider a decision and conduct a hearing, such hearing shall not be scheduled any sooner than the Board's next regular meeting, subject to the notice requirements. When a reconsideration hearing is scheduled, notice shall be given as in the case of the original hearing, and shall include any persons who are parties or who became parties at the original hearing. No additional posting of fees will be required.

## VIII. APPEALS TO THE COURTS

A final decision may be appealed to the Circuit Court as provided for in the State and County Laws. Appeal times begin from the signed, written decision of the Board.

## IX. CONDUCT OF BOARD MEMBERS

- A. **Speaking for the Board** A member will not appear to speak for the Board except as authorized by the Board. In any public or private statement concerning Board affairs, members will carefully indicate whether they are speaking for the Board or for themselves.
- B. **Gratuities and Entertainment** Members shall not accept gifts or compensation from any persons involved in matters which have come before the member while on the Board or in matters that are reasonable to assume may come before the Board.
- C. **Privileged Information** Members shall not engage in any business transaction in regard to which they have an advantage because of information gained through membership on the Board.
- D. **Conduct at Meetings** Members shall conduct themselves at Board meetings in a fair, understanding and gracious manner. They shall seek to be considerate to all individuals, attitudes and differences of opinion involved on official Board business.

## X. DEFINITIONS

- A. **Rules of Construction:** The rules of construction found in Section 1-19-11.100 (A) (1) through (13) of the Frederick County Zoning Ordinance shall apply to these bylaws.
- B. **Groups:** Groups recognized by the Chair shall mean any group that has provided to the Board of Appeals, by close of business one day prior to the hearing in which the group will testify, any of the following; a copy of its bylaws or articles of incorporation, a list of its officers with contact information, or a copy of the latest minutes of the group's meeting.
- C. **Definitions:** The definitions found in Section 1-19-11.100 (B) of the Frederick County Zoning Ordinance shall apply to these bylaws.

## XI. RULES NOT JURISDICTIONAL

These rules of procedure do not constitute jurisdictional requirements. Failure of

the Board, its Staff, or any party to comply with any provisions of these rules of procedure shall not invalidate any otherwise valid decisions or action of the Board.

XII. **AMENDMENTS**

Amendments to this document may be proposed when the majority of the Board deems it necessary.

XIII These bylaws supersede all previously adopted bylaws.

By-laws adopted March 25, 2010

/s/  
Lara Roholt Westdorp, Chair